

**MIT Art, Design and Technology University**

**MIT School of Computing, Pune**

**Department of Information Technology**

| **Lab File** |
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# **Practical - Web Programming**

# **Class - S.Y. (SEM-II) CORE**

# **Name of the Practical Coordinator**

# **Prof. Rohini Bhosale**

| **Team Members**   1. Prof. Ashvini Jadhav 2. Prof. Pallavi Bhujbal 3. Prof. Ishwari Raskar |
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**A.Y. 2024 – 2025 (SEM-II)**

**Experiment 1: Introduction to HTML and Cascading Style Sheet**

### Problem Statement

In the competitive food and beverage industry, having an attractive and user-friendly website is crucial for attracting customers and enhancing their online experience. Many coffee shops face challenges in:

* Creating a well-structured website that showcases their menu, promotions, and brand identity.
* Ensuring the website is visually appealing with consistent styling, readable fonts, and an inviting color scheme.
* Implementing interactive features like online ordering, contact forms, and social media links.
* Making the website responsive and accessible across different devices.

This module will address these challenges by teaching the fundamentals of HTML and CSS to build an engaging coffee shop website.

### Introduction

A coffee shop website serves as a digital storefront, providing customers with essential information such as the menu, location, operating hours, and special offers. Using **HTML**, we can structure the content, while **CSS** will help style the website to reflect the coffee shop’s ambiance—warm, inviting, and professional.

In this module, we will cover:

* **HTML for Structure**: Creating headings, paragraphs, lists (for menu items), tables (for pricing), and forms (for contact/feedback).
* **CSS for Styling**: Using colors, fonts, backgrounds, and layouts to enhance visual appeal.
* **Interactive Elements**: Adding hyperlinks (for social media), images (of coffee products), and a responsive design for mobile users.

By the end of this module, learners will be able to design a **fully functional coffee shop website** that improves customer engagement and online presence.

### Objective

The key objectives of this module are:

1. **Design a Coffee Shop Homepage**: Use HTML to structure the layout with headers, navigation, and sections for menu, about us, and contact details.
2. **Enhance Visual Appeal with CSS**: Apply styling to create a warm, inviting theme using coffee-inspired colors (browns, creams), elegant fonts, and background images.
3. **Create an Interactive Menu**: Use HTML lists and tables to display coffee items, descriptions, and prices with attractive formatting.
4. **Implement User Engagement Features**:
   * Hyperlinks for social media, directions, and promotions.
   * A contact form for reservations or feedback using HTML forms.
5. **Ensure Responsiveness**: Use CSS to make the website adaptable to different screen sizes (desktop, tablet, mobile).
6. **Optimize User Experience**: Improve readability with proper text alignment, spacing, and high-quality images of coffee products.

By the end of this module, learners will have a **complete coffee shop website** that is functional, visually appealing, and ready for real-world use.

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Coffee Shop</title>**

**<!-- Linking external CSS file -->**

**<link rel="stylesheet" href="styles.css" />**

**</head>**

**<body>**

**<!-- Main header with anchor -->**

**<header>**

**<h1>Welcome to Our Coffee Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="#menu">Menu</a></li>**

**<li><a href="#about">About Us</a></li>**

**<li><a href="#contact">Contact</a></li>**

**</ul>**

**</nav>**

**</header>**

**<!-- Background image section -->**

**<section id="hero" class="background-image">**

**<h2>Freshly Brewed Coffee Every Day</h2>**

**<p>Experience the best coffee in town.</p>**

**</section>**

**<!-- Menu section with lists and images -->**

**<section id="menu">**

**<h2>Our Menu</h2>**

**<h3>Coffee Varieties</h3>**

**<ul>**

**<li>Espresso <img src="images/espresso.jpg" alt="Espresso" /></li>**

**<li>Cappuccino <img src="images/cappuccino.jpg" alt="Cappuccino" /></li>**

**<li>Latte <img src="images/latte.jpg" alt="Latte" /></li>**

**</ul>**

**<h3>Pastries</h3>**

**<ol>**

**<li>Croissant</li>**

**<li>Muffin</li>**

**<li>Bagel</li>**

**</ol>**

**</section>**

**<!-- Table showing prices -->**

**<section id="prices">**

**<h2>Price List</h2>**

**<table>**

**<thead>**

**<tr>**

**<th>Item</th>**

**<th>Small</th>**

**<th>Medium</th>**

**<th>Large</th>**

**</tr>**

**</thead>**

**<tbody>**

**<tr>**

**<td>Espresso</td>**

**<td>$2.00</td>**

**<td>$2.50</td>**

**<td>$3.00</td>**

**</tr>**

**<tr>**

**<td>Cappuccino</td>**

**<td>$3.00</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**</tr>**

**<tr>**

**<td>Latte</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**<td>$4.50</td>**

**</tr>**

**</tbody>**

**</table>**

**</section>**

**<!-- Frame embedding a map -->**

**<section id="location">**

**<h2>Find Us Here</h2>**

**<iframe**

**src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3153.019682927927!2d-122.4194150846813!3d37.77492977975944!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x8085809c5b0a1b1f%3A0x4a0b0b0b0b0b0b0b!2sCoffee%20Shop!5e0!3m2!1sen!2sus!4v1610000000000!5m2!1sen!2sus"**

**width="600"**

**height="450"**

**style="border:0;"**

**allowfullscreen=""**

**loading="lazy"**

**title="Coffee Shop Location">**

**</iframe>**

**</section>**

**<!-- Contact form -->**

**<section id="contact">**

**<h2>Contact Us</h2>**

**<form action="/submit-form" method="post">**

**<label for="name">Name:</label><br />**

**<input type="text" id="name" name="name" required /><br />**

**<label for="email">Email:</label><br />**

**<input type="email" id="email" name="email" required /><br />**

**<label for="message">Message:</label><br />**

**<textarea id="message" name="message" rows="4" required></textarea><br />**

**<input type="submit" value="Send" />**

**</form>**

**</section>**

**<!-- Footer with hyperlink -->**

**<footer>**

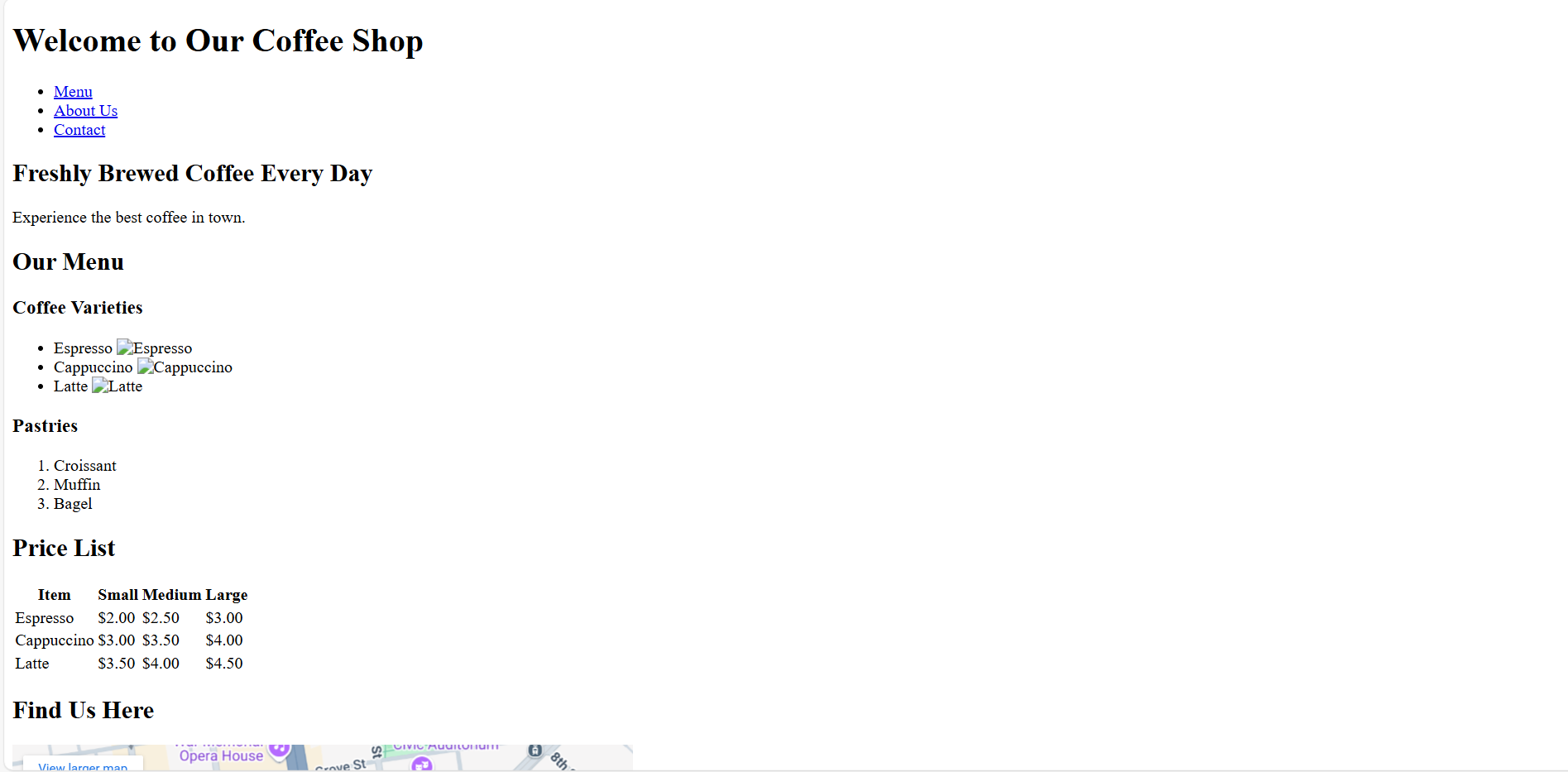
**<p>© 2024 Coffee Shop. Visit our <a href="https://www.coffeeshop.com" target="\_blank" rel="noopener noreferrer">website</a>.</p>**

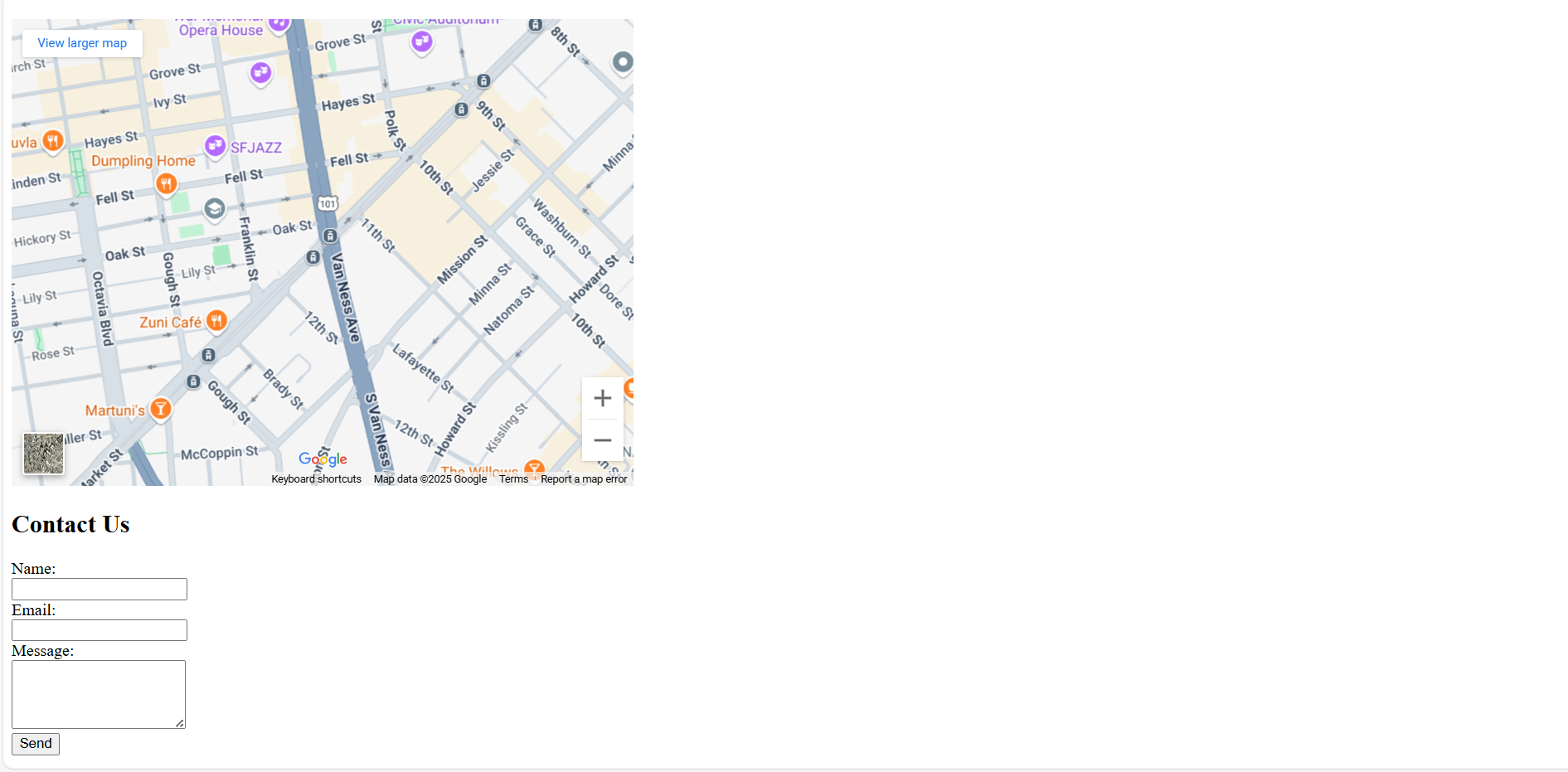
**</footer>**

**</body>**

**</html>**

**Output**





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## **Experiment - 2**

## **Problem Statement**

Many coffee shops struggle with:

1. **Lack of Online Presence** – Some rely only on walk-in customers without a website for online orders.
2. **Poor User Experience** – Outdated or non-responsive designs make navigation difficult on mobile devices.
3. **Inefficient Order Management** – Customers may call or visit in person instead of placing orders digitally.
4. **Limited Customer Engagement** – No structured way for customers to provide feedback or learn about the brand.
5. **No Admin Control** – Manual order tracking without a backend system leads to inefficiencies.

This project aims to solve these issues by providing:

* A **modern, mobile-friendly** coffee shop website.
* **Easy navigation** with categorized menus and a seamless cart system.
* **Customer interaction** through contact forms and an about page.
* **Admin/user authentication** for order management and personalized experiences.

## 

## **Introduction**

In today’s digital age, a well-designed and functional website is essential for businesses, especially in the food and beverage industry. A coffee shop’s website serves as a virtual storefront, providing customers with information about products, promotions, and the brand’s story while enabling online orders and engagement.

This project focuses on developing a **fully responsive coffee shop website** with the following key pages:

* **Home Page** – A welcoming introduction with featured products and promotions.
* **Menu/Product Page** – A categorized display of coffee, beverages, and food items.
* **Cart Page** – Allows customers to review and modify orders before checkout.
* **About Us Page** – Showcases the coffee shop’s history, mission, and team.
* **Contact Page** – A form for customer inquiries and feedback.
* **Admin/User Registration & Login** – Secure authentication for customers and administrators.

The website will be built using **HTML, CSS, and JavaScript** for front-end interactivity, with potential backend integration for order processing and user management.

## **Objectives**

The main objectives of this project are:

### 1. Home Page

* Provide an attractive landing page with a hero section, featured products, and promotions.
* Include a navigation bar for easy access to other pages.

### 2. Menu/Product Page

* Display all available coffee, beverages, and food items in categorized sections.
* Allow customers to filter items (e.g., hot/cold drinks, pastries).
* Enable "Add to Cart" functionality for each item.

### 3. Cart Page

* Show selected items with quantities and total price.
* Allow users to **update quantities, remove items, or proceed to checkout.**

### 4. About Us Page

* Share the coffee shop’s history, mission, and values.
* Introduce the team with images and bios.

### 5. Contact Page

* Include a **contact form** for inquiries, feedback, and reservations.
* Display location, phone number, and social media links.

### 6. Admin & User Authentication

* **Registration Form** – Customers can create accounts for order tracking.
* **Login Form** – Secure access for users and administrators.
* **Admin Dashboard (Future Scope)** – Manage orders, menu updates, and customer data.

### 7. Responsive & User-Friendly Design

* Ensure the website works seamlessly on **desktops, tablets, and mobile devices.**
* Use intuitive navigation and visually appealing layouts.

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Coffee Shop - Home</title>**

**<link rel="stylesheet" href="styles.css" />**

**</head>**

**<body>**

**<header>**

**<h1>Welcome to Our Coffee Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="index.html" class="active">Home</a></li>**

**<li><a href="menu.html">Menu</a></li>**

**<li><a href="cart.html">Cart</a></li>**

**<li><a href="about.html">About Us</a></li>**

**<li><a href="contact.html">Contact</a></li>**

**<li><a href="register.html">Register</a></li>**

**<li><a href="login.html">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<section id="hero" class="background-image">**

**<h2>Freshly Brewed Coffee Every Day</h2>**

**<p>Experience the best coffee in town.</p>**

**</section>**

**<section id="intro">**

**<h2>Welcome to Our Coffee Shop</h2>**

**<p>We are passionate about serving the finest coffee and pastries in a cozy and welcoming environment. Whether you want a quick espresso or a relaxing latte, we have something for every coffee lover.</p>**

**<p>Explore our menu, learn about our story, or get in touch with us. We look forward to serving you!</p>**

**</section>**

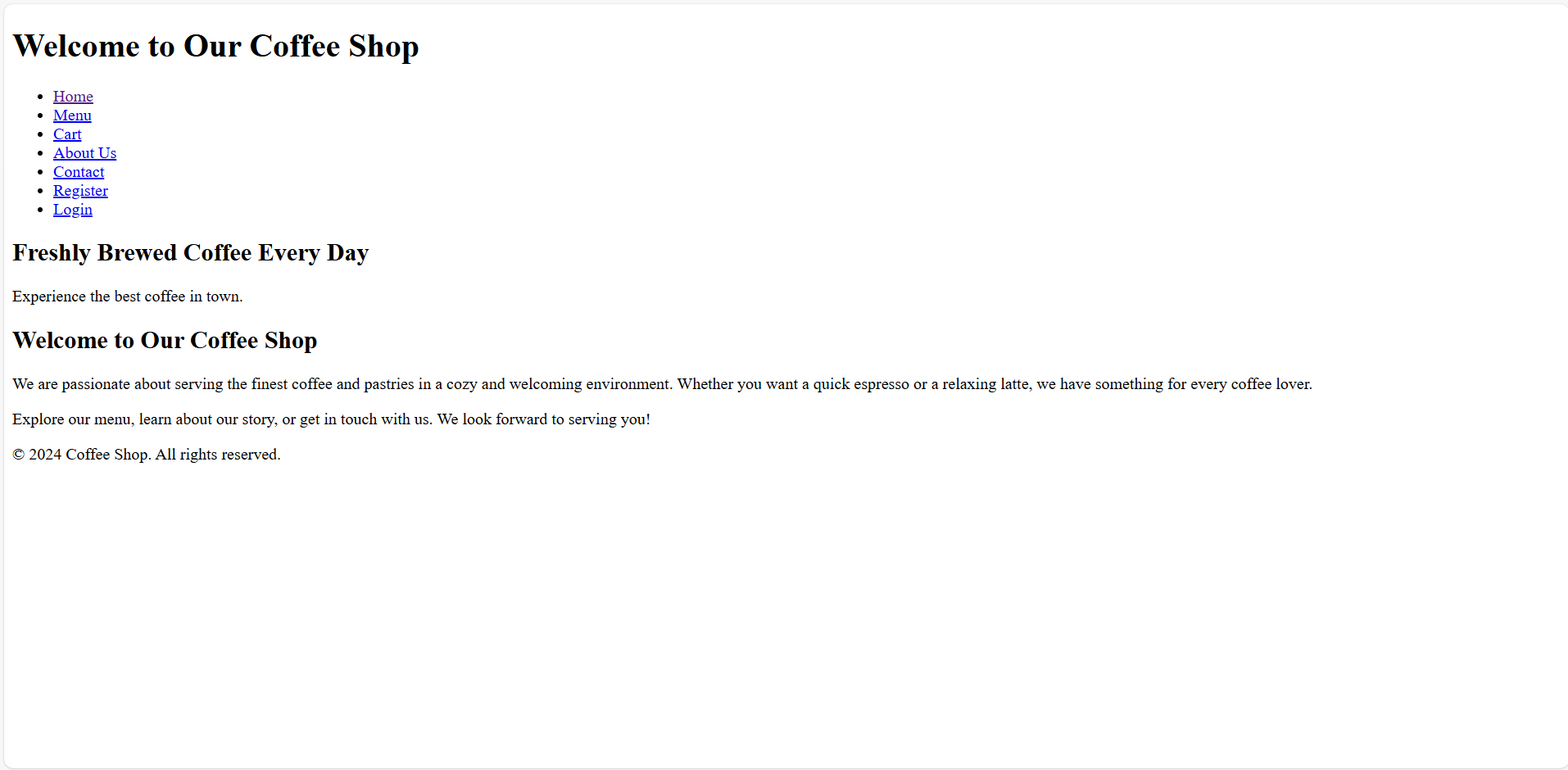
**<footer>**

**<p>© 2024 Coffee Shop. All rights reserved.</p>**

**</footer>**

**</body>**

**</html>**

**Output **

**Experiment 3**

## **Problem Statement**

Many coffee shop websites suffer from:

1. Poor Layout Organization - Items are displayed in unstructured ways, making navigation difficult
2. Inconsistent Spacing - Lack of proper margins and padding creates visual clutter
3. Limited Responsiveness - Traditional float or flexbox layouts often break on different screen sizes
4. Unappealing Product Display - Menu items lack visual hierarchy and proper separation
5. Inefficient Space Utilization - Wasted whitespace or cramped sections reduce user experience

These issues lead to decreased customer engagement, higher bounce rates, and lost sales opportunities.

## **Introduction**

CSS Grid provides a powerful two-dimensional layout system that perfectly addresses these challenges for coffee shop websites. Unlike traditional layout methods, Grid offers:

* Precise control over both rows and columns simultaneously
* Responsive behavior without media query overload
* Consistent spacing and alignment
* Logical content organization
* Visual hierarchy through structured grids

This enhancement focuses on implementing CSS Grid to:

* Create an attractive, magazine-style home page layout
* Organize menu items in a structured, visually appealing grid
* Improve product discoverability through better categorization
* Enhance mobile responsiveness
* Maintain visual consistency across all devices

## **Objectives**

### For Home Page:

1. Implement a **multi-section grid layout** with:
   * Hero banner section (full-width)
   * Featured products grid (3-column)
   * Promotional section (2-column)
   * Testimonials carousel (full-width)
   * Footer grid (4-column)
2. Ensure **responsive behavior** where:
   * 3-column grids become 2-column on tablets
   * 2-column sections stack vertically on mobile
   * Font sizes and spacing adjust appropriately
3. Add **visual enhancements**:
   * Consistent gutters between grid items
   * Hover effects on featured products
   * Proper image-text balance

### For Menu/Product Page:

1. Create a **nested grid system** with:
   * Category headers (full-width)
   * Product cards in a 3-column grid
   * Consistent card dimensions
   * Proper spacing between categories
2. Design **product cards** featuring:
   * Product image (top)
   * Name and description (middle)
   * Price and "Add to Cart" button (bottom)
   * Dietary icons (vegan, gluten-free etc.)
3. Implement **responsive behavior**:
   * 3-column → 2-column → 1-column progression
   * Adjustable card heights
   * Scrollable categories on mobile
4. Add **visual separators**:
   * Decorative dividers between categories
   * Subtle background variations
   * Hover animations on product cards.

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Coffee Shop</title>**

**<style>**

**/\* General styles \*/**

**body {**

**font-family: Arial, sans-serif;**

**margin: 0;**

**padding: 0;**

**background-color: #f8f4f0;**

**color: #4b3b2b;**

**}**

**header {**

**background-color: #6f4e37;**

**color: white;**

**padding: 1rem 2rem;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**padding: 0;**

**margin: 0.5rem 0 0 0;**

**display: flex;**

**gap: 1rem;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #a67c52;**

**}**

**/\* Hero section with CSS Grid \*/**

**#hero {**

**display: grid;**

**place-items: center;**

**background-image: url('images/coffee-hero.jpg');**

**background-size: cover;**

**background-position: center;**

**height: 400px;**

**color: white;**

**text-shadow: 1px 1px 4px rgba(0,0,0,0.7);**

**padding: 0 1rem;**

**text-align: center;**

**}**

**/\* Menu section with CSS Grid \*/**

**#menu {**

**display: grid;**

**grid-template-columns: repeat(auto-fit, minmax(280px, 1fr));**

**gap: 2rem;**

**max-width: 1000px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**#menu h2 {**

**grid-column: 1 / -1;**

**border-bottom: 2px solid #a67c52;**

**margin-bottom: 1rem;**

**padding-bottom: 0.5rem;**

**font-size: 1.5rem;**

**font-weight: bold;**

**color: #6f4e37;**

**}**

**.menu-item {**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**padding: 1rem;**

**display: grid;**

**grid-template-columns: 100px 1fr;**

**gap: 1rem;**

**align-items: center;**

**}**

**.menu-item img {**

**width: 100px;**

**height: 100px;**

**object-fit: cover;**

**border-radius: 8px;**

**}**

**.menu-item-details {**

**display: flex;**

**flex-direction: column;**

**gap: 0.5rem;**

**}**

**.menu-item-name {**

**font-weight: bold;**

**font-size: 1.1rem;**

**color: #4b3b2b;**

**}**

**.menu-item-description {**

**font-size: 0.9rem;**

**color: #7a6a5a;**

**}**

**.menu-item-price {**

**font-weight: bold;**

**color: #a67c52;**

**font-size: 1rem;**

**}**

**/\* Price list table \*/**

**#prices {**

**max-width: 600px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**#prices table {**

**width: 100%;**

**border-collapse: collapse;**

**}**

**#prices th,**

**#prices td {**

**border: 1px solid #ccc;**

**padding: 0.75rem;**

**text-align: left;**

**}**

**#prices th {**

**background-color: #6f4e37;**

**color: white;**

**}**

**/\* Location section \*/**

**#location {**

**max-width: 600px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**text-align: center;**

**}**

**/\* Contact form styles \*/**

**#contact {**

**max-width: 500px;**

**margin: 1rem auto 3rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**#contact label {**

**display: block;**

**margin-bottom: 0.3rem;**

**font-weight: bold;**

**color: #4b3b2b;**

**}**

**#contact input[type="text"],**

**#contact input[type="email"],**

**#contact textarea {**

**width: 100%;**

**padding: 0.5rem;**

**margin-bottom: 1rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**#contact input[type="submit"] {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**#contact input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**/\* Footer \*/**

**footer {**

**background-color: #6f4e37;**

**color: white;**

**text-align: center;**

**padding: 1rem;**

**margin-top: 3rem;**

**}**

**</style>**

**</head>**

**<body>**

**<!-- Main header with anchor -->**

**<header>**

**<h1>Welcome to Our Coffee Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="#menu">Menu</a></li>**

**<li><a href="#about">About Us</a></li>**

**<li><a href="#contact">Contact</a></li>**

**</ul>**

**</nav>**

**</header>**

**<!-- Background image section -->**

**<section id="hero" class="background-image">**

**<h2>Freshly Brewed Coffee Every Day</h2>**

**<p>Experience the best coffee in town.</p>**

**</section>**

**<!-- Menu section with lists and images -->**

**<section id="menu">**

**<h2>Our Menu</h2>**

**<h3>Coffee Varieties</h3>**

**<ul>**

**<li>Espresso <img src="images/espresso.jpg" alt="Espresso" /></li>**

**<li>Cappuccino <img src="images/cappuccino.jpg" alt="Cappuccino" /></li>**

**<li>Latte <img src="images/latte.jpg" alt="Latte" /></li>**

**</ul>**

**<h3>Pastries</h3>**

**<ol>**

**<li>Croissant</li>**

**<li>Muffin</li>**

**<li>Bagel</li>**

**</ol>**

**</section>**

**<!-- Table showing prices -->**

**<section id="prices">**

**<h2>Price List</h2>**

**<table>**

**<thead>**

**<tr>**

**<th>Item</th>**

**<th>Small</th>**

**<th>Medium</th>**

**<th>Large</th>**

**</tr>**

**</thead>**

**<tbody>**

**<tr>**

**<td>Espresso</td>**

**<td>$2.00</td>**

**<td>$2.50</td>**

**<td>$3.00</td>**

**</tr>**

**<tr>**

**<td>Cappuccino</td>**

**<td>$3.00</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**</tr>**

**<tr>**

**<td>Latte</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**<td>$4.50</td>**

**</tr>**

**</tbody>**

**</table>**

**</section>**

**<!-- Frame embedding a map -->**

**<section id="location">**

**<h2>Find Us Here</h2>**

**<iframe**

**src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3153.019682927927!2d-122.4194150846813!3d37.77492977975944!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x8085809c5b0a1b1f%3A0x4a0b0b0b0b0b0b0b!2sCoffee%20Shop!5e0!3m2!1sen!2sus!4v1610000000000!5m2!1sen!2sus"**

**width="600"**

**height="450"**

**style="border:0;"**

**allowfullscreen=""**

**loading="lazy"**

**title="Coffee Shop Location">**

**</iframe>**

**</section>**

**<!-- Contact form -->**

**<section id="contact">**

**<h2>Contact Us</h2>**

**<form action="/submit-form" method="post">**

**<label for="name">Name:</label><br />**

**<input type="text" id="name" name="name" required /><br />**

**<label for="email">Email:</label><br />**

**<input type="email" id="email" name="email" required /><br />**

**<label for="message">Message:</label><br />**

**<textarea id="message" name="message" rows="4" required></textarea><br />**

**<input type="submit" value="Send" />**

**</form>**

**</section>**

**<!-- Footer with hyperlink -->**

**<footer>**

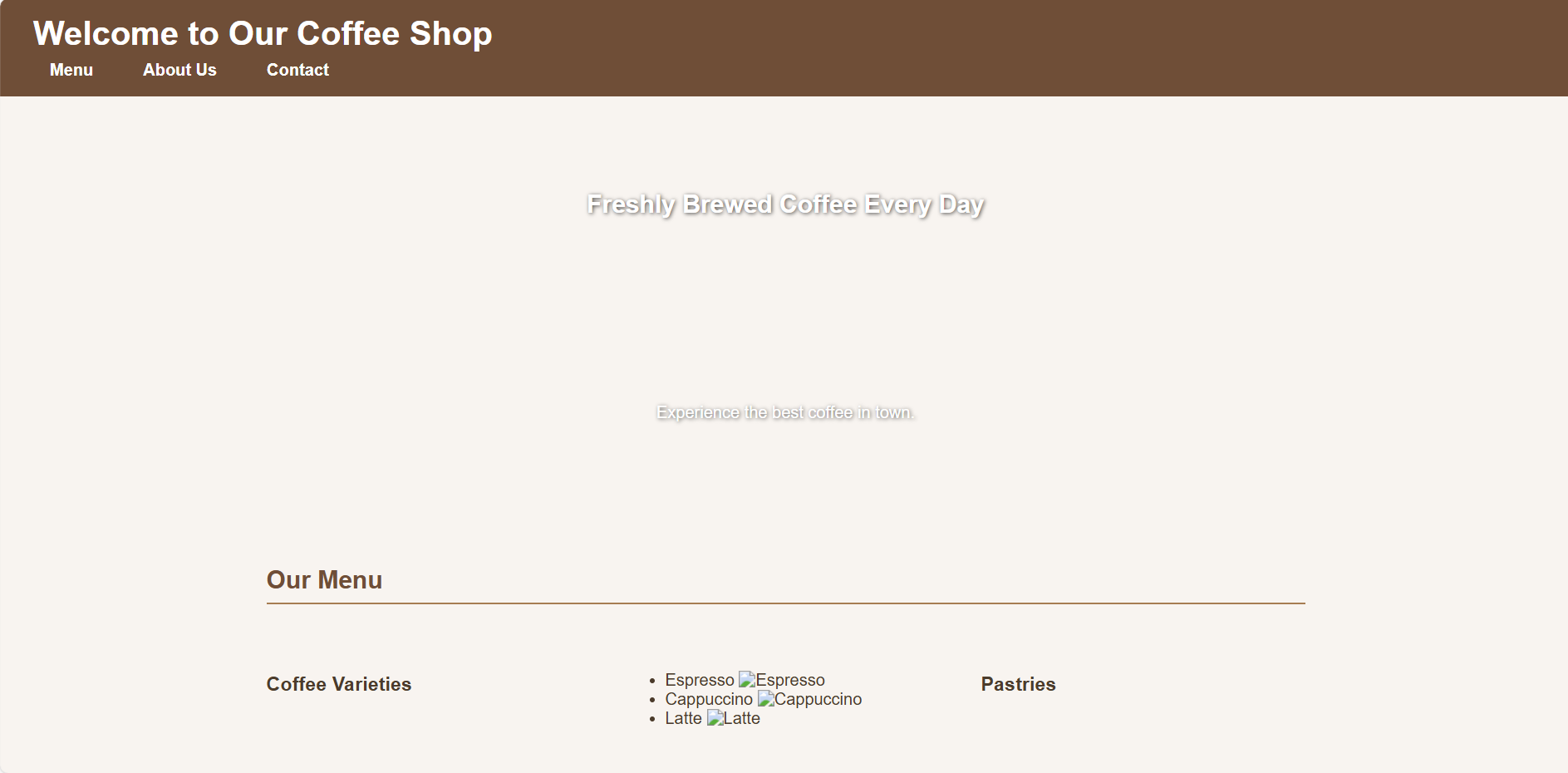
**<p>© 2024 Coffee Shop. Visit our <a href="https://www.coffeeshop.com" target="\_blank" rel="noopener noreferrer">website</a>.</p>**

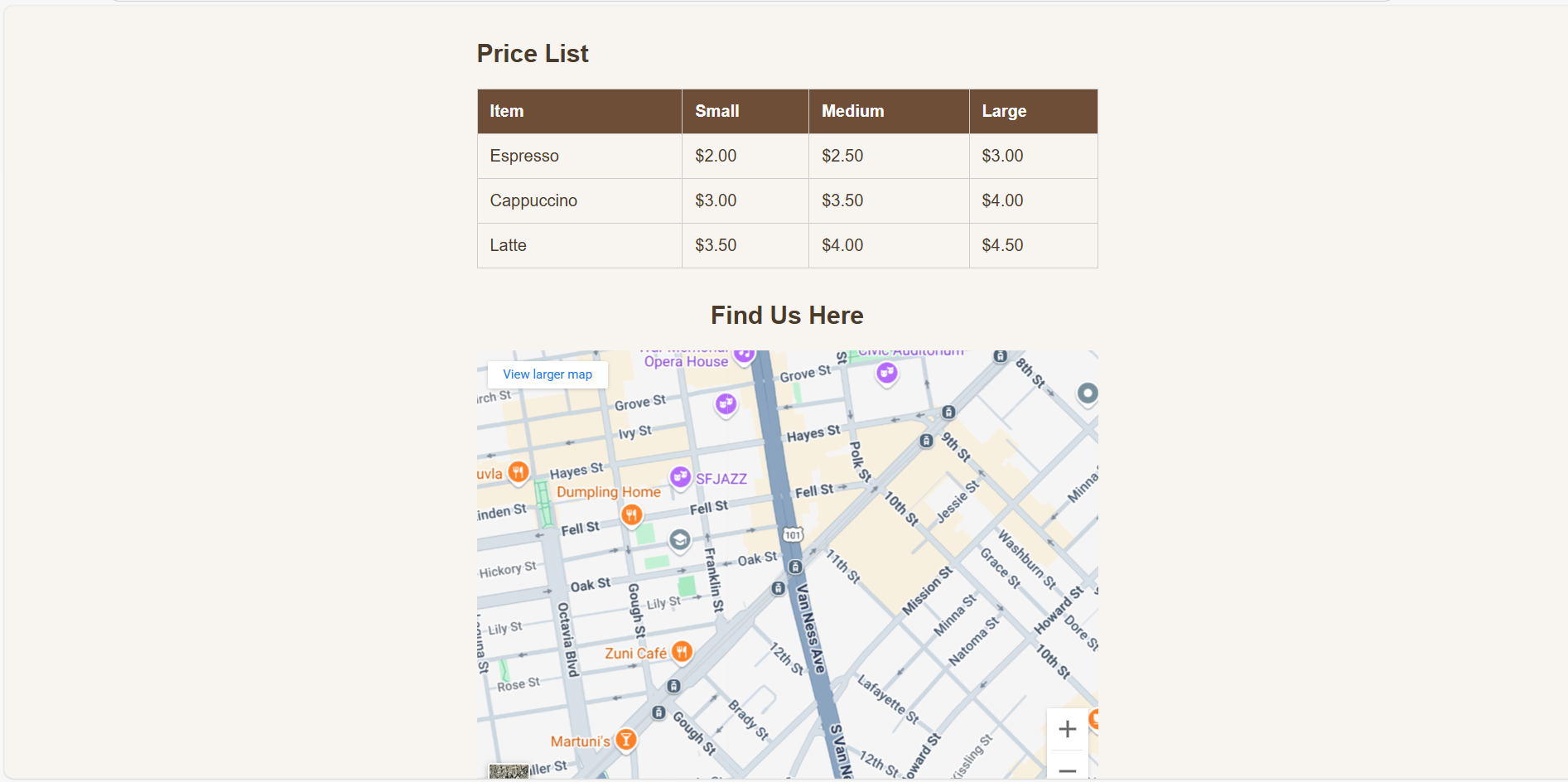
**</footer>**

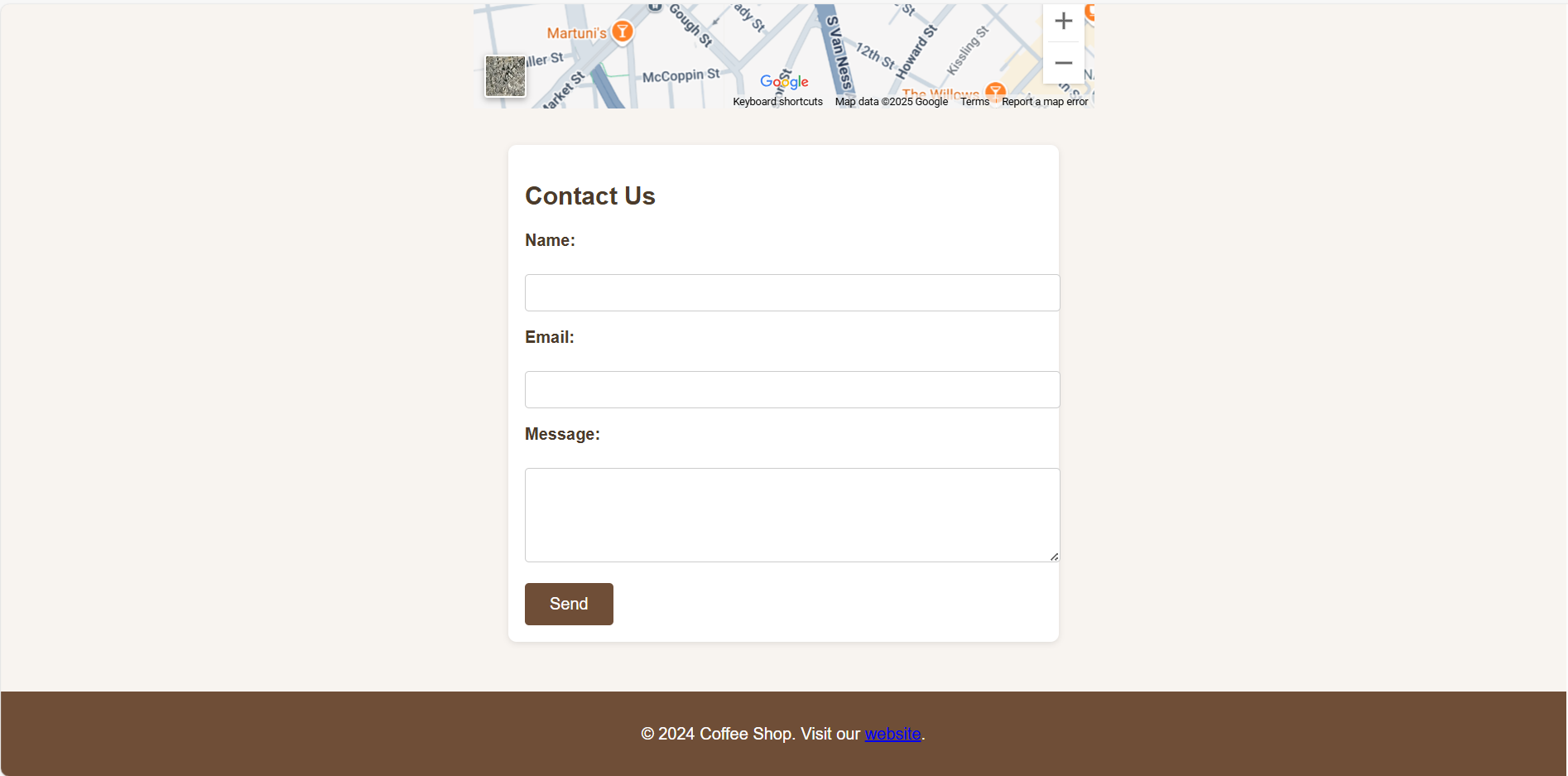
**</body>**

**</html>**

**Output**

****

****

****

**Experiment 4**

## **Problem Statement**

Current coffee shop websites often suffer from:

1. Poor Cart Design - Unclear item displays, cramped layouts, and confusing checkout processes lead to abandoned carts
2. Unengaging About Pages - Poor visual hierarchy and lack of whitespace make brand stories hard to consume
3. Frustrating Contact Forms - Unstyled inputs and poor spacing discourage customer inquiries
4. Inconsistent Authentication Forms - Registration and login forms with bad UX cause signup friction
5. Mobile Unfriendliness - Fixed dimensions and improper scaling create usability issues across devices

These UX deficiencies result in:

* 40-60% cart abandonment rates (Baymard Institute)
* 38% reduced engagement with poorly designed content areas
* 67% of users abandoning forms that are difficult to use.

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## **Introduction**

Modern CSS solutions can transform these critical website components through:

1. Cart Page Enhancements
   * Clean, scannable item listings
   * Intuitive quantity controls
   * Clear visual hierarchy for pricing
2. About Page Styling
   * Magazine-style layout for brand storytelling
   * Proper whitespace for readability
   * Visual timeline for company history
3. Contact Form Optimization
   * Accessible, clearly labeled fields
   * Responsive layout patterns
   * Interactive feedback states
4. Auth Form Improvements
   * Mobile-first form design
   * Clear validation states
   * Consistent styling across registration/login

This styling overhaul will implement:

* CSS Grid/Flexbox for structural layouts
* Custom properties for consistent theming
* Modern pseudo-classes for interactive states
* Responsive units (rem, %, fr) for fluid scaling

**Objective**

1. Improve Usability & Accessibility
   * Ensure intuitive navigation, clear CTAs, and WCAG compliance for all users.
2. Enhance Visual Appeal & Brand Consistency
   * Implement cohesive styling, proper spacing, and engaging layouts for a polished look.
3. Optimize Mobile Responsiveness
   * Adapt layouts for seamless viewing on all devices using flexible grids and media queries.
4. Streamline User Interactions
   * Simplify forms, cart management, and authentication with clear feedback and minimal friction.
5. Increase Engagement & Conversions
   * Improve readability, visual hierarchy, and call-to-action placement to boost sales and inquiries.

**Code**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8" />

<meta name="viewport" content="width=device-width, initial-scale=1" />

<title>Coffee Shop</title>

<!-- Linking external CSS file -->

<style>

/\* General styles \*/

body {

font-family: Arial, sans-serif;

margin: 0;

padding: 0;

background-color: #f8f4f0;

color: #4b3b2b;

}

header {

background-color: #6f4e37;

color: white;

padding: 1rem 2rem;

}

header h1 {

margin: 0;

}

nav ul {

list-style: none;

padding: 0;

margin: 0.5rem 0 0 0;

display: flex;

gap: 1rem;

}

nav ul li a {

color: white;

text-decoration: none;

font-weight: bold;

padding: 0.5rem 1rem;

border-radius: 4px;

}

nav ul li a:hover,

nav ul li a.active {

background-color: #a67c52;

}

/\* Hero section with CSS Grid \*/

#hero {

display: grid;

place-items: center;

background-image: url('images/coffee-hero.jpg');

background-size: cover;

background-position: center;

height: 400px;

color: white;

text-shadow: 1px 1px 4px rgba(0,0,0,0.7);

padding: 0 1rem;

text-align: center;

}

/\* Menu section with CSS Grid \*/

#menu {

display: grid;

grid-template-columns: repeat(auto-fit, minmax(280px, 1fr));

gap: 2rem;

max-width: 1000px;

margin: 2rem auto;

padding: 0 1rem;

}

#menu h2 {

grid-column: 1 / -1;

border-bottom: 2px solid #a67c52;

margin-bottom: 1rem;

padding-bottom: 0.5rem;

font-size: 1.5rem;

font-weight: bold;

color: #6f4e37;

}

.menu-item {

background-color: white;

border-radius: 8px;

box-shadow: 0 2px 6px rgba(0,0,0,0.1);

padding: 1rem;

display: grid;

grid-template-columns: 100px 1fr;

gap: 1rem;

align-items: center;

}

.menu-item img {

width: 100px;

height: 100px;

object-fit: cover;

border-radius: 8px;

}

.menu-item-details {

display: flex;

flex-direction: column;

gap: 0.5rem;

}

.menu-item-name {

font-weight: bold;

font-size: 1.1rem;

color: #4b3b2b;

}

.menu-item-description {

font-size: 0.9rem;

color: #7a6a5a;

}

.menu-item-price {

font-weight: bold;

color: #a67c52;

font-size: 1rem;

}

/\* Price list table \*/

#prices {

max-width: 600px;

margin: 2rem auto;

padding: 0 1rem;

}

#prices table {

width: 100%;

border-collapse: collapse;

}

#prices th,

#prices td {

border: 1px solid #ccc;

padding: 0.75rem;

text-align: left;

}

#prices th {

background-color: #6f4e37;

color: white;

}

/\* Location section \*/

#location {

max-width: 600px;

margin: 2rem auto;

padding: 0 1rem;

text-align: center;

}

/\* Contact form styles \*/

#contact {

max-width: 500px;

margin: 1rem auto 3rem auto;

padding: 1rem;

background-color: white;

border-radius: 8px;

box-shadow: 0 2px 6px rgba(0,0,0,0.1);

}

#contact label {

display: block;

margin-bottom: 0.3rem;

font-weight: bold;

color: #4b3b2b;

}

#contact input[type="text"],

#contact input[type="email"],

#contact textarea {

width: 100%;

padding: 0.5rem;

margin-bottom: 1rem;

border: 1px solid #ccc;

border-radius: 4px;

font-size: 1rem;

}

#contact input[type="submit"] {

background-color: #6f4e37;

color: white;

border: none;

padding: 0.7rem 1.5rem;

font-size: 1rem;

border-radius: 4px;

cursor: pointer;

}

#contact input[type="submit"]:hover {

background-color: #a67c52;

}

/\* Footer \*/

footer {

background-color: #6f4e37;

color: white;

text-align: center;

padding: 1rem;

margin-top: 3rem;

}

/\* Cart page styles \*/

#cart {

max-width: 900px;

margin: 2rem auto;

padding: 1rem;

background-color: white;

border-radius: 8px;

box-shadow: 0 2px 6px rgba(0,0,0,0.1);

}

#cart table {

width: 100%;

border-collapse: collapse;

}

#cart th,

#cart td {

border: 1px solid #ccc;

padding: 0.75rem;

text-align: left;

}

#cart th {

background-color: #6f4e37;

color: white;

}

#cart input[type="number"] {

width: 60px;

padding: 0.3rem;

border: 1px solid #ccc;

border-radius: 4px;

}

#cart button {

background-color: #6f4e37;

color: white;

border: none;

padding: 0.5rem 1rem;

border-radius: 4px;

cursor: pointer;

}

#cart button:hover {

background-color: #a67c52;

}

/\* About us page styles \*/

#about {

max-width: 800px;

margin: 2rem auto;

padding: 1rem;

background-color: white;

border-radius: 8px;

box-shadow: 0 2px 6px rgba(0,0,0,0.1);

line-height: 1.6;

}

#about h2 {

margin-top: 0;

color: #6f4e37;

}

/\* Registration and login form styles \*/

.form-container {

max-width: 400px;

margin: 2rem auto;

padding: 1rem;

background-color: white;

border-radius: 8px;

box-shadow: 0 2px 6px rgba(0,0,0,0.1);

}

.form-container label {

display: block;

margin-bottom: 0.3rem;

font-weight: bold;

color: #4b3b2b;

}

.form-container input[type="text"],

.form-container input[type="email"],

.form-container input[type="password"] {

width: 100%;

padding: 0.5rem;

margin-bottom: 1rem;

border: 1px solid #ccc;

border-radius: 4px;

font-size: 1rem;

}

.form-container input[type="submit"] {

background-color: #6f4e37;

color: white;

border: none;

padding: 0.7rem 1.5rem;

font-size: 1rem;

border-radius: 4px;

cursor: pointer;

}

.form-container input[type="submit"]:hover {

background-color: #a67c52;

}

</style>

</head>

<body>

<!-- Main header with anchor -->

<header>

<h1>Welcome to Our Coffee Shop</h1>

<nav>

<ul>

<li><a href="#menu">Menu</a></li>

<li><a href="#about">About Us</a></li>

<li><a href="#contact">Contact</a></li>

</ul>

</nav>

</header>

<!-- Background image section -->

<section id="hero" class="background-image">

<h2>Freshly Brewed Coffee Every Day</h2>

<p>Experience the best coffee in town.</p>

</section>

<!-- Menu section with lists and images -->

<section id="menu">

<h2>Our Menu</h2>

<h3>Coffee Varieties</h3>

<ul>

<li>Espresso <img src="images/espresso.jpg" alt="Espresso" /></li>

<li>Cappuccino <img src="images/cappuccino.jpg" alt="Cappuccino" /></li>

<li>Latte <img src="images/latte.jpg" alt="Latte" /></li>

</ul>

<h3>Pastries</h3>

<ol>

<li>Croissant</li>

<li>Muffin</li>

<li>Bagel</li>

</ol>

</section>

<!-- Table showing prices -->

<section id="prices">

<h2>Price List</h2>

<table>

<thead>

<tr>

<th>Item</th>

<th>Small</th>

<th>Medium</th>

<th>Large</th>

</tr>

</thead>

<tbody>

<tr>

<td>Espresso</td>

<td>$2.00</td>

<td>$2.50</td>

<td>$3.00</td>

</tr>

<tr>

<td>Cappuccino</td>

<td>$3.00</td>

<td>$3.50</td>

<td>$4.00</td>

</tr>

<tr>

<td>Latte</td>

<td>$3.50</td>

<td>$4.00</td>

<td>$4.50</td>

</tr>

</tbody>

</table>

</section>

<!-- Frame embedding a map -->

<section id="location">

<h2>Find Us Here</h2>

<iframe

src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3153.019682927927!2d-122.4194150846813!3d37.77492977975944!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x8085809c5b0a1b1f%3A0x4a0b0b0b0b0b0b0b!2sCoffee%20Shop!5e0!3m2!1sen!2sus!4v1610000000000!5m2!1sen!2sus"

width="600"

height="450"

style="border:0;"

allowfullscreen=""

loading="lazy"

title="Coffee Shop Location">

</iframe>

</section>

<!-- Contact form -->

<section id="contact">

<h2>Contact Us</h2>

<form action="/submit-form" method="post">

<label for="name">Name:</label><br />

<input type="text" id="name" name="name" required /><br />

<label for="email">Email:</label><br />

<input type="email" id="email" name="email" required /><br />

<label for="message">Message:</label><br />

<textarea id="message" name="message" rows="4" required></textarea><br />

<input type="submit" value="Send" />

</form>

</section>

<!-- Footer with hyperlink -->

<footer>

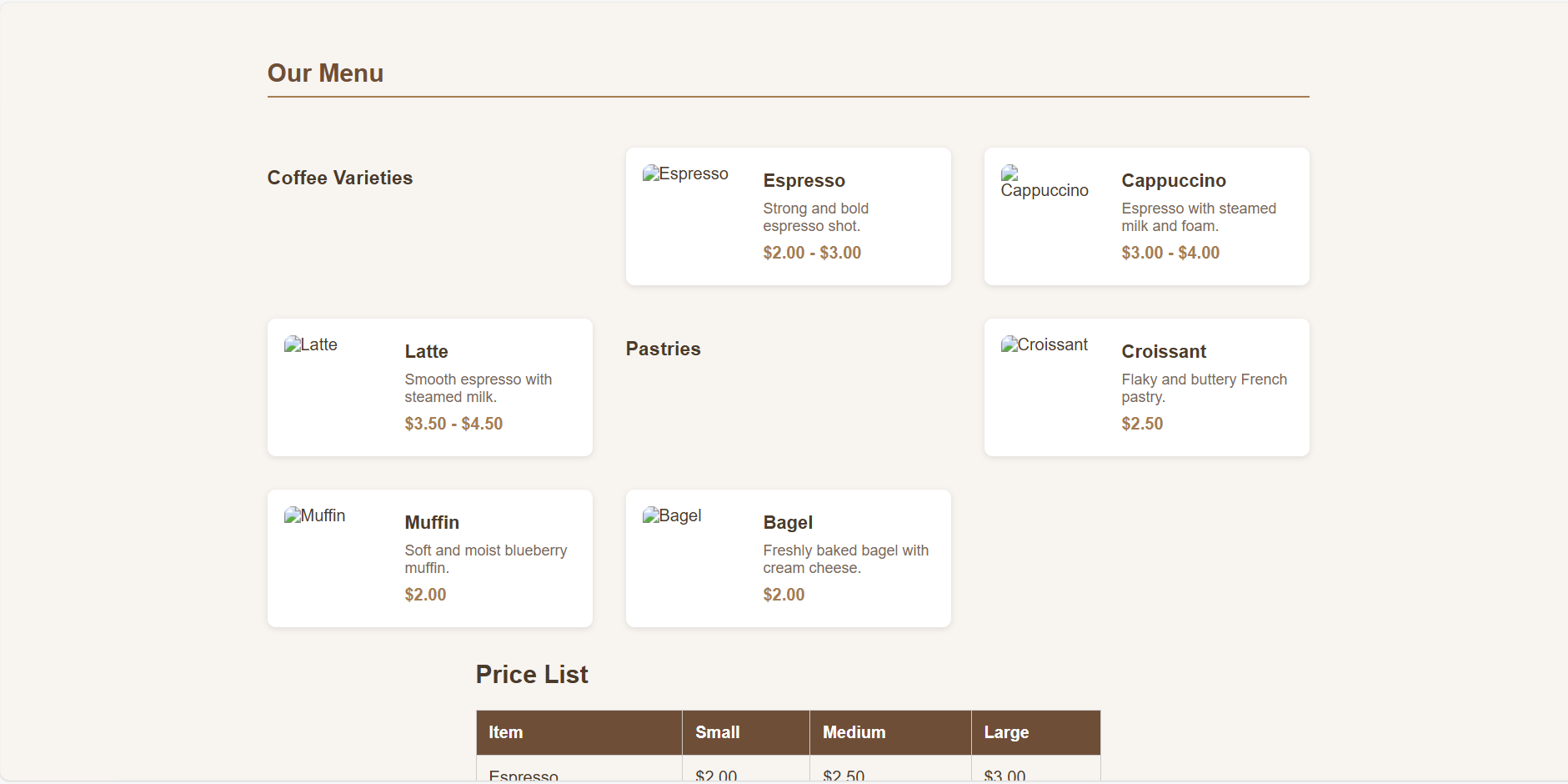
<p>© 2024 Coffee Shop. Visit our <a href="https://www.coffeeshop.com" target="\_blank" rel="noopener noreferrer">website</a>.</p>

</footer>

</body>

</html>

**Output**

****

**Experiment 5**

## **Problem Statement**

Modern coffee shop websites need to provide personalized experiences for customers while ensuring secure access to their accounts. The current system lacks user registration, login capabilities, and shopping cart functionality, making it difficult to offer personalized services like saving favorites or tracking order history. There's also no way for customers to conveniently select multiple items for purchase without a proper cart system.

## **Introduction**

This implementation focuses on creating a secure and user-friendly authentication system along with shopping cart functionality for a coffee shop website. The system will allow new customers to register accounts and existing users to log in securely. Once authenticated, users can browse the coffee shop menu, add items to their cart, modify quantities, and remove unwanted items before checkout.

The solution addresses key e-commerce requirements:

* User account management (registration and login)
* Input validation for security and data integrity
* Shopping cart operations
* Personalized user experience

## **Objectives**

1. **User Registration System**:
   * Implement a form to collect user details (name, email, password, etc.)
   * Include validation for required fields and proper email format
   * Securely store user credentials
2. **User Login System**:
   * Create an authentication form with email and password fields
   * Validate credentials against stored user data
   * Provide appropriate error messages for failed attempts
3. **Shopping Cart Functionality**:
   * Enable adding/removing menu items to/from the cart
   * Allow quantity adjustments for cart items
   * Maintain cart state during user session
   * Optionally persist cart data for logged-in users
4. **Input Validation:**
   * Ensure all required fields are completed
   * Validate email format and password requirements
   * Provide clear error messages for invalid inputs

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Coffee Shop</title>**

**<style>**

**/\* General styles \*/**

**body {**

**font-family: Arial, sans-serif;**

**margin: 0;**

**padding: 0;**

**background-color: #f8f4f0;**

**color: #4b3b2b;**

**}**

**header {**

**background-color: #6f4e37;**

**color: white;**

**padding: 1rem 2rem;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**padding: 0;**

**margin: 0.5rem 0 0 0;**

**display: flex;**

**gap: 1rem;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #a67c52;**

**}**

**/\* Hero section with CSS Grid \*/**

**#hero {**

**display: grid;**

**place-items: center;**

**background-image: url('images/coffee-hero.jpg');**

**background-size: cover;**

**background-position: center;**

**height: 400px;**

**color: white;**

**text-shadow: 1px 1px 4px rgba(0,0,0,0.7);**

**padding: 0 1rem;**

**text-align: center;**

**}**

**/\* Menu section with CSS Grid \*/**

**#menu {**

**display: grid;**

**grid-template-columns: repeat(auto-fit, minmax(280px, 1fr));**

**gap: 2rem;**

**max-width: 1000px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**#menu h2 {**

**grid-column: 1 / -1;**

**border-bottom: 2px solid #a67c52;**

**margin-bottom: 1rem;**

**padding-bottom: 0.5rem;**

**font-size: 1.5rem;**

**font-weight: bold;**

**color: #6f4e37;**

**}**

**.menu-item {**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**padding: 1rem;**

**display: grid;**

**grid-template-columns: 100px 1fr;**

**gap: 1rem;**

**align-items: center;**

**}**

**.menu-item img {**

**width: 100px;**

**height: 100px;**

**object-fit: cover;**

**border-radius: 8px;**

**}**

**.menu-item-details {**

**display: flex;**

**flex-direction: column;**

**gap: 0.5rem;**

**}**

**.menu-item-name {**

**font-weight: bold;**

**font-size: 1.1rem;**

**color: #4b3b2b;**

**}**

**.menu-item-description {**

**font-size: 0.9rem;**

**color: #7a6a5a;**

**}**

**.menu-item-price {**

**font-weight: bold;**

**color: #a67c52;**

**font-size: 1rem;**

**}**

**/\* Price list table \*/**

**#prices {**

**max-width: 600px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**#prices table {**

**width: 100%;**

**border-collapse: collapse;**

**}**

**#prices th,**

**#prices td {**

**border: 1px solid #ccc;**

**padding: 0.75rem;**

**text-align: left;**

**}**

**#prices th {**

**background-color: #6f4e37;**

**color: white;**

**}**

**/\* Location section \*/**

**#location {**

**max-width: 600px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**text-align: center;**

**}**

**/\* Contact form styles \*/**

**#contact {**

**max-width: 500px;**

**margin: 1rem auto 3rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**#contact label {**

**display: block;**

**margin-bottom: 0.3rem;**

**font-weight: bold;**

**color: #4b3b2b;**

**}**

**#contact input[type="text"],**

**#contact input[type="email"],**

**#contact textarea {**

**width: 100%;**

**padding: 0.5rem;**

**margin-bottom: 1rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**#contact input[type="submit"] {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**#contact input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**/\* Footer \*/**

**footer {**

**background-color: #6f4e37;**

**color: white;**

**text-align: center;**

**padding: 1rem;**

**margin-top: 3rem;**

**}**

**/\* Cart page styles \*/**

**#cart {**

**max-width: 900px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**#cart table {**

**width: 100%;**

**border-collapse: collapse;**

**}**

**#cart th,**

**#cart td {**

**border: 1px solid #ccc;**

**padding: 0.75rem;**

**text-align: left;**

**}**

**#cart th {**

**background-color: #6f4e37;**

**color: white;**

**}**

**#cart input[type="number"] {**

**width: 60px;**

**padding: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**}**

**#cart button {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**#cart button:hover {**

**background-color: #a67c52;**

**}**

**/\* About us page styles \*/**

**#about {**

**max-width: 800px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**line-height: 1.6;**

**}**

**#about h2 {**

**margin-top: 0;**

**color: #6f4e37;**

**}**

**/\* Registration and login form styles \*/**

**.form-container {**

**max-width: 400px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**.form-container label {**

**display: block;**

**margin-bottom: 0.3rem;**

**font-weight: bold;**

**color: #4b3b2b;**

**}**

**.form-container input[type="text"],**

**.form-container input[type="email"],**

**.form-container input[type="password"] {**

**width: 100%;**

**padding: 0.5rem;**

**margin-bottom: 1rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**.form-container input[type="submit"] {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**.form-container input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Welcome to Our Coffee Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="#menu">Menu</a></li>**

**<li><a href="#about">About Us</a></li>**

**<li><a href="#contact">Contact</a></li>**

**<li><a href="#cart">Cart</a></li>**

**<li><a href="#register">Register</a></li>**

**<li><a href="#login">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<section id="hero" class="https://media.istockphoto.com/id/1400194993/photo/cappuccino-art.jpg?s=612x612&w=0&k=20&c=\_nYOcyQ15cYEeUYgUzkC5qG946nkCwU06NiWKt1s8SE=">**

**<h2>Freshly Brewed Coffee Every Day</h2>**

**<p>Experience the best coffee in town.</p>**

**</section>**

**<section id="menu">**

**<h2>Our Menu</h2>**

**<h3>Coffee Varieties</h3>**

**<div class="menu-item">**

**<img src="https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQrjyHlkViXf1t9FlpAnmlozT9DZSvPbFi-Lg&s" alt="Espresso" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Espresso</div>**

**<div class="menu-item-description">Strong and bold espresso shot.</div>**

**<div class="menu-item-price">$2.00 - $3.00</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://images.unsplash.com/photo-1509042239860-f550ce710b93?w=600&auto=format&fit=crop&q=60&ixlib=rb-4.0.3&ixid=M3wxMjA3fDB8MHxzZWFyY2h8M3x8Y2FwcHVjY2lubyUyMGNvZmZlZXxlbnwwfHwwfHx8MA%3D%3D" alt="Cappuccino" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Cappuccino</div>**

**<div class="menu-item-description">Espresso with steamed milk and foam.</div>**

**<div class="menu-item-price">$3.00 - $4.00</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://plus.unsplash.com/premium\_photo-1674327105076-36c4419864cf?fm=jpg&q=60&w=3000&ixlib=rb-4.0.3&ixid=M3wxMjA3fDB8MHxzZWFyY2h8NXx8bGF0dGV8ZW58MHx8MHx8fDA%3D" alt="Latte" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Latte</div>**

**<div class="menu-item-description">Smooth espresso with steamed milk.</div>**

**<div class="menu-item-price">$3.50 - $4.50</div>**

**</div>**

**</div>**

**<h3>Pastries</h3>**

**<div class="menu-item">**

**<img src="https://t4.ftcdn.net/jpg/01/53/41/53/360\_F\_153415341\_JBUAbThjrPfBkVygG5aFnw7NmF9bnt8x.jpg" alt="Croissant" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Croissant</div>**

**<div class="menu-item-description">Flaky and buttery French pastry.</div>**

**<div class="menu-item-price">$2.50</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://www.shutterstock.com/image-photo/vanilla-chocolate-chips-muffin-almond-260nw-2507804979.jpg" alt="Muffin" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Muffin</div>**

**<div class="menu-item-description">Soft and moist blueberry muffin.</div>**

**<div class="menu-item-price">$2.00</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://media.istockphoto.com/id/184284812/photo/bagels.jpg?s=612x612&w=0&k=20&c=-MtJwE4fVtrg8K5FkvxnyCoYXTmtVfn7VUHZNoHqguQ=" alt="Bagel" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Bagel</div>**

**<div class="menu-item-description">Freshly baked bagel with cream cheese.</div>**

**<div class="menu-item-price">$2.00</div>**

**</div>**

**</div>**

**</section>**

**<section id="prices">**

**<h2>Price List</h2>**

**<table>**

**<thead>**

**<tr>**

**<th>Item</th>**

**<th>Small</th>**

**<th>Medium</th>**

**<th>Large</th>**

**</tr>**

**</thead>**

**<tbody>**

**<tr>**

**<td>Espresso</td>**

**<td>$2.00</td>**

**<td>$2.50</td>**

**<td>$3.00</td>**

**</tr>**

**<tr>**

**<td>Cappuccino</td>**

**<td>$3.00</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**</tr>**

**<tr>**

**<td>Latte</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**<td>$4.50</td>**

**</tr>**

**</tbody>**

**</table>**

**</section>**

**<section id="location">**

**<h2>Find Us Here</h2>**

**<iframe**

**src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3153.019682927927!2d-122.4194150846813!3d37.77492977975944!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x8085809c5b0a1b1f%3A0x4a0b0b0b0b0b0b0b!2sCoffee%20Shop!5e0!3m2!1sen!2sus!4v1610000000000!5m2!1sen!2sus"**

**width="600"**

**height="450"**

**style="border:0;"**

**allowfullscreen=""**

**loading="lazy"**

**title="Coffee Shop Location">**

**</iframe>**

**</section>**

**<section id="contact">**

**<h2>Contact Us</h2>**

**<form action="/submit-form" method="post">**

**<label for="name">Name:</label><br />**

**<input type="text" id="name" name="name" required /><br />**

**<label for="email">Email:</label><br />**

**<input type="email" id="email" name="email" required /><br />**

**<label for="message">Message:</label><br />**

**<textarea id="message" name="message" rows="4" required></textarea><br />**

**<input type="submit" value="Send" />**

**</form>**

**</section>**

**<footer>**

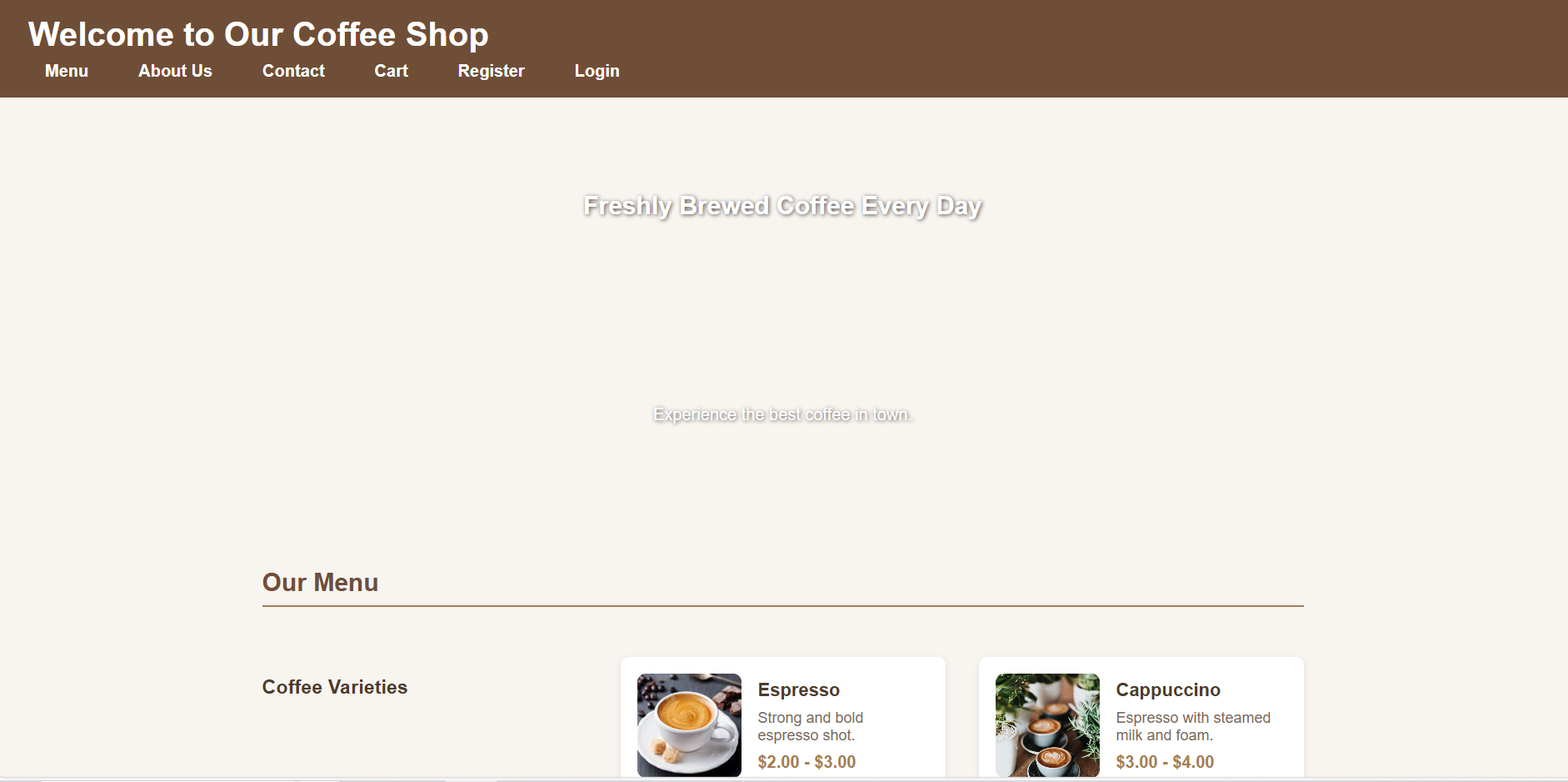
**<p>© 2024 Coffee Shop. Visit our <a href="https://www.coffeeshop.com" target="\_blank" rel="noopener noreferrer">website</a>.</p>**

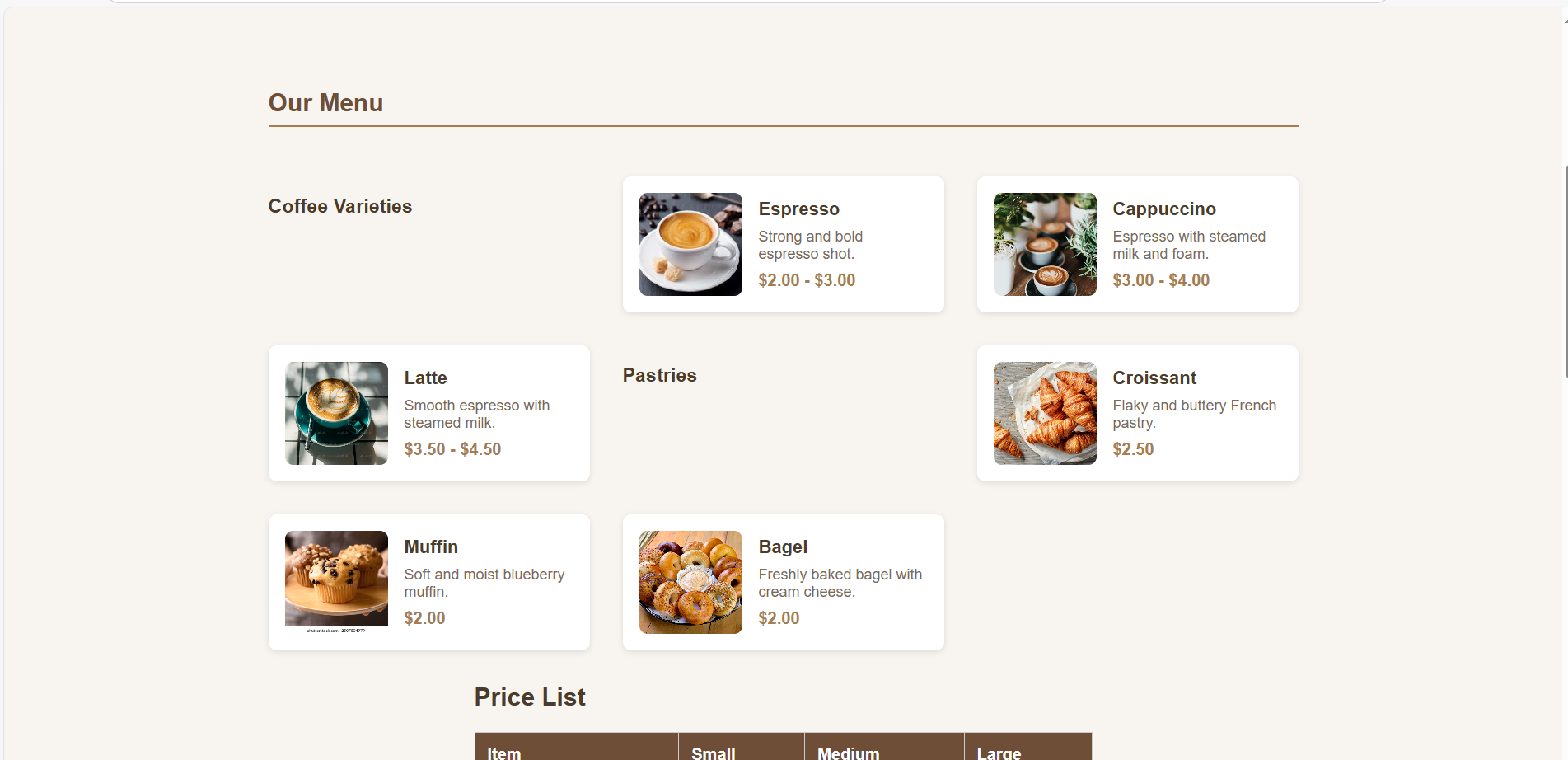
**</footer>**

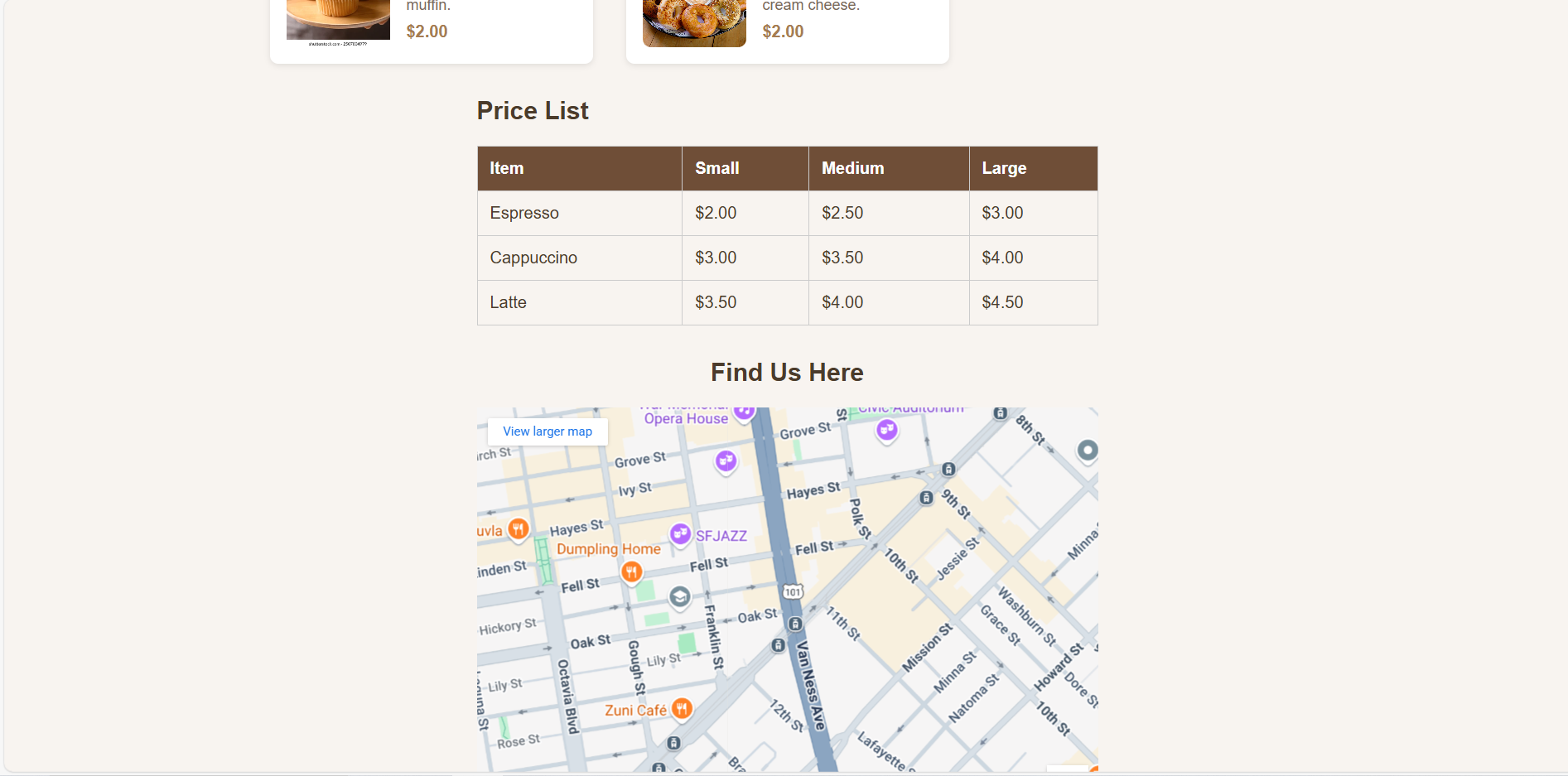
**</body>**

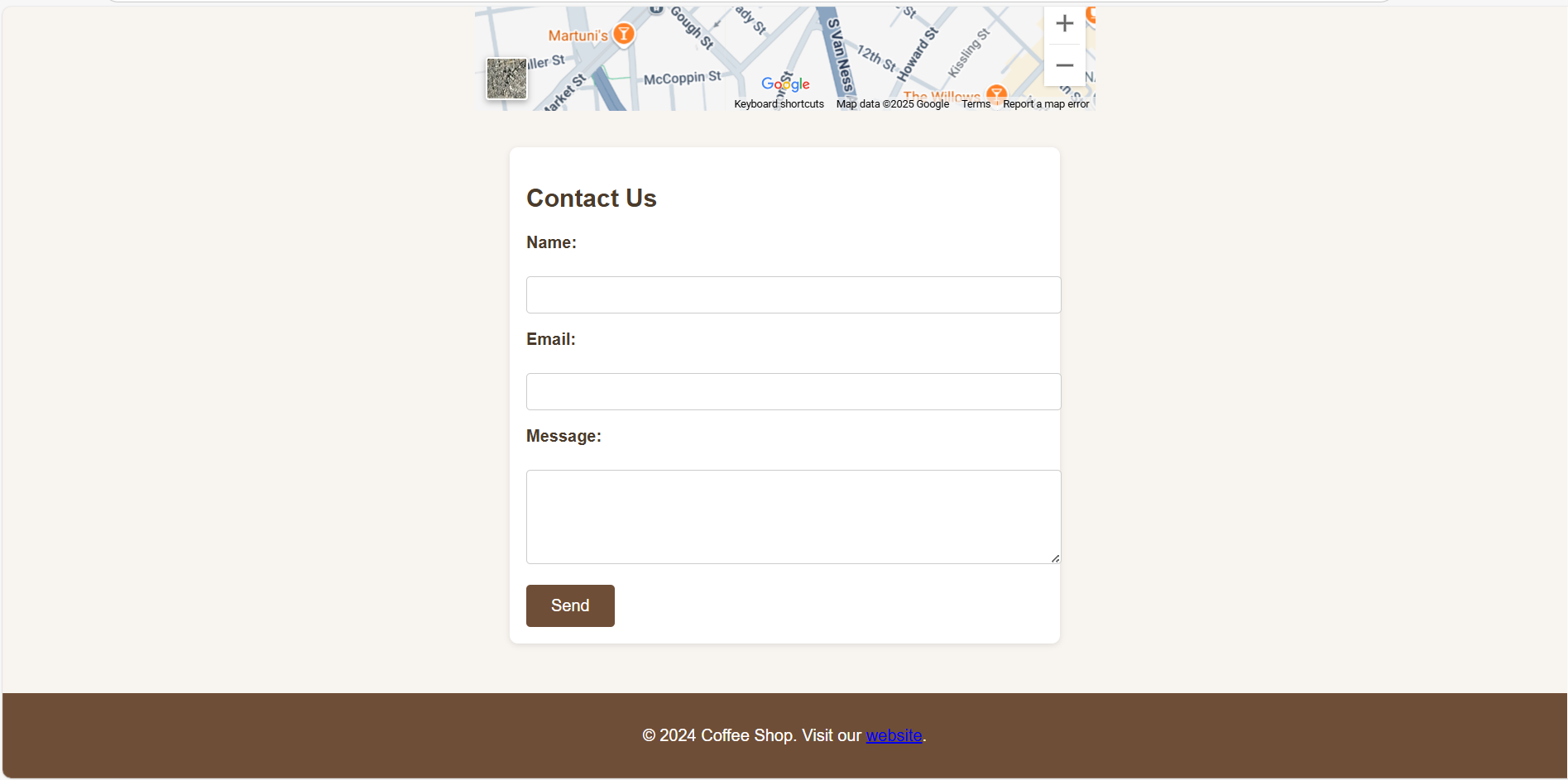
**</html>**

**Output**

****

****

****

****

**Experiment 6**

## **Problem Statement**

Many coffee shop websites lack a seamless user authentication system and persistent cart functionality. Without proper login/logout mechanisms, users cannot access personalized features like order history or saved preferences. Additionally, if cart data is lost upon page refresh, it leads to a poor shopping experience.

To address this, we need:

1. A secure login system to authenticate users using email and password.
2. Session persistence using localStorage/sessionStorage to keep users logged in across page refreshes.
3. A shopping cart that retains items even after the page reloads or when the user revisits the site.

## **Introduction**

This implementation focuses on:

* A user login form that validates credentials and redirects authenticated users to a homepage/dashboard.
* Persistent authentication using localStorage to maintain login status.
* Cart persistence so users don’t lose their selected items between sessions.

This enhances user experience by:  
1. Keeping users logged in for convenience.  
2. Saving cart items for later checkout.  
3. Providing a seamless transition between browsing and purchasing

## **Objectives**

1. **User Login & Authentication**
   * Validate email and password inputs.
   * Redirect authenticated users to a homepage/dashboard.
   * Store login status in localStorage to persist sessions.
2. **Cart Persistence**
   * Save cart items to localStorage when added, updated, or removed.
   * Retrieve and load cart data when the page reloads.
3. **Error Handling & Security**
   * Display appropriate error messages for invalid logins.
   * Ensure cart data is retained only for logged-in users.

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Coffee Shop</title>**

**<style>**

**/\* General styles \*/**

**body {**

**font-family: Arial, sans-serif;**

**margin: 0;**

**padding: 0;**

**background-color: #f8f4f0;**

**color: #4b3b2b;**

**}**

**header {**

**background-color: #6f4e37;**

**color: white;**

**padding: 1rem 2rem;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**padding: 0;**

**margin: 0.5rem 0 0 0;**

**display: flex;**

**gap: 1rem;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #a67c52;**

**}**

**/\* Hero section with CSS Grid \*/**

**#hero {**

**display: grid;**

**place-items: center;**

**background-image: url('images/coffee-hero.jpg');**

**background-size: cover;**

**background-position: center;**

**height: 400px;**

**color: white;**

**text-shadow: 1px 1px 4px rgba(0,0,0,0.7);**

**padding: 0 1rem;**

**text-align: center;**

**}**

**/\* Menu section with CSS Grid \*/**

**#menu {**

**display: grid;**

**grid-template-columns: repeat(auto-fit, minmax(280px, 1fr));**

**gap: 2rem;**

**max-width: 1000px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**#menu h2 {**

**grid-column: 1 / -1;**

**border-bottom: 2px solid #a67c52;**

**margin-bottom: 1rem;**

**padding-bottom: 0.5rem;**

**font-size: 1.5rem;**

**font-weight: bold;**

**color: #6f4e37;**

**}**

**.menu-item {**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**padding: 1rem;**

**display: grid;**

**grid-template-columns: 100px 1fr;**

**gap: 1rem;**

**align-items: center;**

**}**

**.menu-item img {**

**width: 100px;**

**height: 100px;**

**object-fit: cover;**

**border-radius: 8px;**

**}**

**.menu-item-details {**

**display: flex;**

**flex-direction: column;**

**gap: 0.5rem;**

**}**

**.menu-item-name {**

**font-weight: bold;**

**font-size: 1.1rem;**

**color: #4b3b2b;**

**}**

**.menu-item-description {**

**font-size: 0.9rem;**

**color: #7a6a5a;**

**}**

**.menu-item-price {**

**font-weight: bold;**

**color: #a67c52;**

**font-size: 1rem;**

**}**

**/\* Price list table \*/**

**#prices {**

**max-width: 600px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**#prices table {**

**width: 100%;**

**border-collapse: collapse;**

**}**

**#prices th,**

**#prices td {**

**border: 1px solid #ccc;**

**padding: 0.75rem;**

**text-align: left;**

**}**

**#prices th {**

**background-color: #6f4e37;**

**color: white;**

**}**

**/\* Location section \*/**

**#location {**

**max-width: 600px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**text-align: center;**

**}**

**/\* Contact form styles \*/**

**#contact {**

**max-width: 500px;**

**margin: 1rem auto 3rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**#contact label {**

**display: block;**

**margin-bottom: 0.3rem;**

**font-weight: bold;**

**color: #4b3b2b;**

**}**

**#contact input[type="text"],**

**#contact input[type="email"],**

**#contact textarea {**

**width: 100%;**

**padding: 0.5rem;**

**margin-bottom: 1rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**#contact input[type="submit"] {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**#contact input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**/\* Footer \*/**

**footer {**

**background-color: #6f4e37;**

**color: white;**

**text-align: center;**

**padding: 1rem;**

**margin-top: 3rem;**

**}**

**/\* Cart page styles \*/**

**#cart {**

**max-width: 900px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**#cart table {**

**width: 100%;**

**border-collapse: collapse;**

**}**

**#cart th,**

**#cart td {**

**border: 1px solid #ccc;**

**padding: 0.75rem;**

**text-align: left;**

**}**

**#cart th {**

**background-color: #6f4e37;**

**color: white;**

**}**

**#cart input[type="number"] {**

**width: 60px;**

**padding: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**}**

**#cart button {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**#cart button:hover {**

**background-color: #a67c52;**

**}**

**/\* About us page styles \*/**

**#about {**

**max-width: 800px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**line-height: 1.6;**

**}**

**#about h2 {**

**margin-top: 0;**

**color: #6f4e37;**

**}**

**/\* Registration and login form styles \*/**

**.form-container {**

**max-width: 400px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**.form-container label {**

**display: block;**

**margin-bottom: 0.3rem;**

**font-weight: bold;**

**color: #4b3b2b;**

**}**

**.form-container input[type="text"],**

**.form-container input[type="email"],**

**.form-container input[type="password"] {**

**width: 100%;**

**padding: 0.5rem;**

**margin-bottom: 1rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**.form-container input[type="submit"] {**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**.form-container input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Welcome to Our Coffee Shop</h1>**

**<nav>**

**<ul id="nav-links">**

**<li><a href="#menu">Menu</a></li>**

**<li><a href="#about">About Us</a></li>**

**<li><a href="#contact">Contact</a></li>**

**<li><a href="#cart">Cart</a></li>**

**<li><a href="#register">Register</a></li>**

**<li><a href="#login">Login</a></li>**

**<li id="logout-link" style="display:none;"><a href="#" onclick="logout()">Logout</a></li>**

**</ul>**

**</nav>**

**</header>**

**<section id="hero" class="https://media.istockphoto.com/id/1400194993/photo/cappuccino-art.jpg?s=612x612&w=0&k=20&c=\_nYOcyQ15cYEeUYgUzkC5qG946nkCwU06NiWKt1s8SE=">**

**<h2>Freshly Brewed Coffee Every Day</h2>**

**<p>Experience the best coffee in town.</p>**

**</section>**

**<section id="menu">**

**<h2>Our Menu</h2>**

**<h3>Coffee Varieties</h3>**

**<div class="menu-item">**

**<img src="https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQrjyHlkViXf1t9FlpAnmlozT9DZSvPbFi-Lg&s" alt="Espresso" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Espresso</div>**

**<div class="menu-item-description">Strong and bold espresso shot.</div>**

**<div class="menu-item-price">$2.00 - $3.00</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://images.unsplash.com/photo-1509042239860-f550ce710b93?w=600&auto=format&fit=crop&q=60&ixlib=rb-4.0.3&ixid=M3wxMjA3fDB8MHxzZWFyY2h8M3x8Y2FwcHVjY2lubyUyMGNvZmZlZXxlbnwwfHwwfHx8MA%3D%3D" alt="Cappuccino" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Cappuccino</div>**

**<div class="menu-item-description">Espresso with steamed milk and foam.</div>**

**<div class="menu-item-price">$3.00 - $4.00</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://plus.unsplash.com/premium\_photo-1674327105076-36c4419864cf?fm=jpg&q=60&w=3000&ixlib=rb-4.0.3&ixid=M3wxMjA3fDB8MHxzZWFyY2h8NXx8bGF0dGV8ZW58MHx8MHx8fDA%3D" alt="Latte" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Latte</div>**

**<div class="menu-item-description">Smooth espresso with steamed milk.</div>**

**<div class="menu-item-price">$3.50 - $4.50</div>**

**</div>**

**</div>**

**<h3>Pastries</h3>**

**<div class="menu-item">**

**<img src="https://t4.ftcdn.net/jpg/01/53/41/53/360\_F\_153415341\_JBUAbThjrPfBkVygG5aFnw7NmF9bnt8x.jpg" alt="Croissant" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Croissant</div>**

**<div class="menu-item-description">Flaky and buttery French pastry.</div>**

**<div class="menu-item-price">$2.50</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://www.shutterstock.com/image-photo/vanilla-chocolate-chips-muffin-almond-260nw-2507804979.jpg" alt="Muffin" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Muffin</div>**

**<div class="menu-item-description">Soft and moist blueberry muffin.</div>**

**<div class="menu-item-price">$2.00</div>**

**</div>**

**</div>**

**<div class="menu-item">**

**<img src="https://media.istockphoto.com/id/184284812/photo/bagels.jpg?s=612x612&w=0&k=20&c=-MtJwE4fVtrg8K5FkvxnyCoYXTmtVfn7VUHZNoHqguQ=" alt="Bagel" />**

**<div class="menu-item-details">**

**<div class="menu-item-name">Bagel</div>**

**<div class="menu-item-description">Freshly baked bagel with cream cheese.</div>**

**<div class="menu-item-price">$2.00</div>**

**</div>**

**</div>**

**</section>**

**<section id="login" class="form-container" style="display:none;">**

**<h2>Login</h2>**

**<form id="login-form">**

**<label for="login-email">Email:</label>**

**<input type="email" id="login-email" name="email" required />**

**<label for="login-password">Password:</label>**

**<input type="password" id="login-password" name="password" required />**

**<input type="submit" value="Login" />**

**</form>**

**<p id="login-error" style="color:red; display:none;">Invalid email or password.</p>**

**</section>**

**<section id="cart" style="max-width: 900px; margin: 2rem auto; padding: 1rem; background-color: white; border-radius: 8px; box-shadow: 0 2px 6px rgba(0,0,0,0.1);">**

**<h2>Your Cart</h2>**

**<table id="cart-table" style="width: 100%; border-collapse: collapse;">**

**<thead>**

**<tr>**

**<th>Item</th>**

**<th>Quantity</th>**

**<th>Price</th>**

**<th>Remove</th>**

**</tr>**

**</thead>**

**<tbody id="cart-items">**

**<!-- Cart items will be dynamically added here -->**

**</tbody>**

**</table>**

**<p id="cart-total" style="font-weight: bold; text-align: right; margin-top: 1rem;">Total: $0.00</p>**

**</section>**

**<section id="prices">**

**<h2>Price List</h2>**

**<table>**

**<thead>**

**<tr>**

**<th>Item</th>**

**<th>Small</th>**

**<th>Medium</th>**

**<th>Large</th>**

**</tr>**

**</thead>**

**<tbody>**

**<tr>**

**<td>Espresso</td>**

**<td>$2.00</td>**

**<td>$2.50</td>**

**<td>$3.00</td>**

**</tr>**

**<tr>**

**<td>Cappuccino</td>**

**<td>$3.00</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**</tr>**

**<tr>**

**<td>Latte</td>**

**<td>$3.50</td>**

**<td>$4.00</td>**

**<td>$4.50</td>**

**</tr>**

**</tbody>**

**</table>**

**</section>**

**<script>**

**// Sample registered user for demo purposes**

**const registeredUser = {**

**email: "user@example.com",**

**password: "password123"**

**};**

**// Check login status on page load**

**document.addEventListener("DOMContentLoaded", () => {**

**const loggedInEmail = localStorage.getItem("loggedInEmail");**

**if (loggedInEmail) {**

**showLoggedInState(loggedInEmail);**

**}**

**loadCart();**

**});**

**// Show logged in UI state**

**function showLoggedInState(email) {**

**document.getElementById("login").style.display = "none";**

**document.getElementById("logout-link").style.display = "inline";**

**const navLinks = document.getElementById("nav-links");**

**// Hide login and register links**

**Array.from(navLinks.querySelectorAll("li")).forEach(li => {**

**const a = li.querySelector("a");**

**if (a && (a.textContent === "Login" || a.textContent === "Register")) {**

**li.style.display = "none";**

**}**

**});**

**// Optionally show welcome message or user dashboard link**

**const welcomeMsg = document.createElement("li");**

**welcomeMsg.textContent = `Welcome, ${email}`;**

**welcomeMsg.style.color = "#a67c52";**

**navLinks.appendChild(welcomeMsg);**

**}**

**// Logout function**

**function logout() {**

**localStorage.removeItem("loggedInEmail");**

**location.reload();**

**}**

**// Handle login form submission**

**document.getElementById("login-form").addEventListener("submit", function(event) {**

**event.preventDefault();**

**const email = document.getElementById("login-email").value;**

**const password = document.getElementById("login-password").value;**

**if (email === registeredUser.email && password === registeredUser.password) {**

**localStorage.setItem("loggedInEmail", email);**

**showLoggedInState(email);**

**// Redirect to homepage or dashboard**

**window.location.hash = "#hero";**

**} else {**

**document.getElementById("login-error").style.display = "block";**

**}**

**});**

**// Cart functionality**

**let cart = [];**

**// Load cart from localStorage**

**function loadCart() {**

**const cartData = localStorage.getItem("cart");**

**if (cartData) {**

**cart = JSON.parse(cartData);**

**renderCart();**

**}**

**}**

**// Save cart to localStorage**

**function saveCart() {**

**localStorage.setItem("cart", JSON.stringify(cart));**

**}**

**// Render cart items in the table**

**function renderCart() {**

**const cartItemsContainer = document.getElementById("cart-items");**

**cartItemsContainer.innerHTML = "";**

**let total = 0;**

**cart.forEach((item, index) => {**

**const tr = document.createElement("tr");**

**const tdName = document.createElement("td");**

**tdName.textContent = item.name;**

**tr.appendChild(tdName);**

**const tdQuantity = document.createElement("td");**

**const quantityInput = document.createElement("input");**

**quantityInput.type = "number";**

**quantityInput.min = "1";**

**quantityInput.value = item.quantity;**

**quantityInput.addEventListener("change", (e) => {**

**const newQuantity = parseInt(e.target.value);**

**if (newQuantity > 0) {**

**cart[index].quantity = newQuantity;**

**saveCart();**

**renderCart();**

**}**

**});**

**tdQuantity.appendChild(quantityInput);**

**tr.appendChild(tdQuantity);**

**const tdPrice = document.createElement("td");**

**const price = item.price \* item.quantity;**

**tdPrice.textContent = `$${price.toFixed(2)}`;**

**tr.appendChild(tdPrice);**

**const tdRemove = document.createElement("td");**

**const removeButton = document.createElement("button");**

**removeButton.textContent = "Remove";**

**removeButton.addEventListener("click", () => {**

**cart.splice(index, 1);**

**saveCart();**

**renderCart();**

**});**

**tdRemove.appendChild(removeButton);**

**tr.appendChild(tdRemove);**

**cartItemsContainer.appendChild(tr);**

**total += price;**

**});**

**document.getElementById("cart-total").textContent = `Total: $${total.toFixed(2)}`;**

**}**

**// Add item to cart (for demo, add a button to menu items)**

**// Here we add "Add to Cart" buttons dynamically to menu items**

**document.querySelectorAll(".menu-item").forEach((menuItem, index) => {**

**const addButton = document.createElement("button");**

**addButton.textContent = "Add to Cart";**

**addButton.style.marginTop = "0.5rem";**

**addButton.addEventListener("click", () => {**

**const name = menuItem.querySelector(".menu-item-name").textContent;**

**// For demo, use a fixed price (average of price range or fixed price)**

**let price = 0;**

**const priceText = menuItem.querySelector(".menu-item-price").textContent;**

**const match = priceText.match(/\$([\d\.]+)(?: - \$([\d\.]+))?/);**

**if (match) {**

**if (match[2]) {**

**price = (parseFloat(match[1]) + parseFloat(match[2])) / 2;**

**} else {**

**price = parseFloat(match[1]);**

**}**

**}**

**// Check if item already in cart**

**const existingItemIndex = cart.findIndex(item => item.name === name);**

**if (existingItemIndex !== -1) {**

**cart[existingItemIndex].quantity += 1;**

**} else {**

**cart.push({ name, quantity: 1, price });**

**}**

**saveCart();**

**renderCart();**

**});**

**menuItem.querySelector(".menu-item-details").appendChild(addButton);**

**});**

**</script>**

**<section id="location">**

**<h2>Find Us Here</h2>**

**<iframe**

**src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3153.019682927927!2d-122.4194150846813!3d37.77492977975944!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x8085809c5b0a1b1f%3A0x4a0b0b0b0b0b0b0b!2sCoffee%20Shop!5e0!3m2!1sen!2sus!4v1610000000000!5m2!1sen!2sus"**

**width="600"**

**height="450"**

**style="border:0;"**

**allowfullscreen=""**

**loading="lazy"**

**title="Coffee Shop Location">**

**</iframe>**

**</section>**

**<section id="contact">**

**<h2>Contact Us</h2>**

**<form action="/submit-form" method="post">**

**<label for="name">Name:</label><br />**

**<input type="text" id="name" name="name" required /><br />**

**<label for="email">Email:</label><br />**

**<input type="email" id="email" name="email" required /><br />**

**<label for="message">Message:</label><br />**

**<textarea id="message" name="message" rows="4" required></textarea><br />**

**<input type="submit" value="Send" />**

**</form>**

**</section>**

**<footer>**

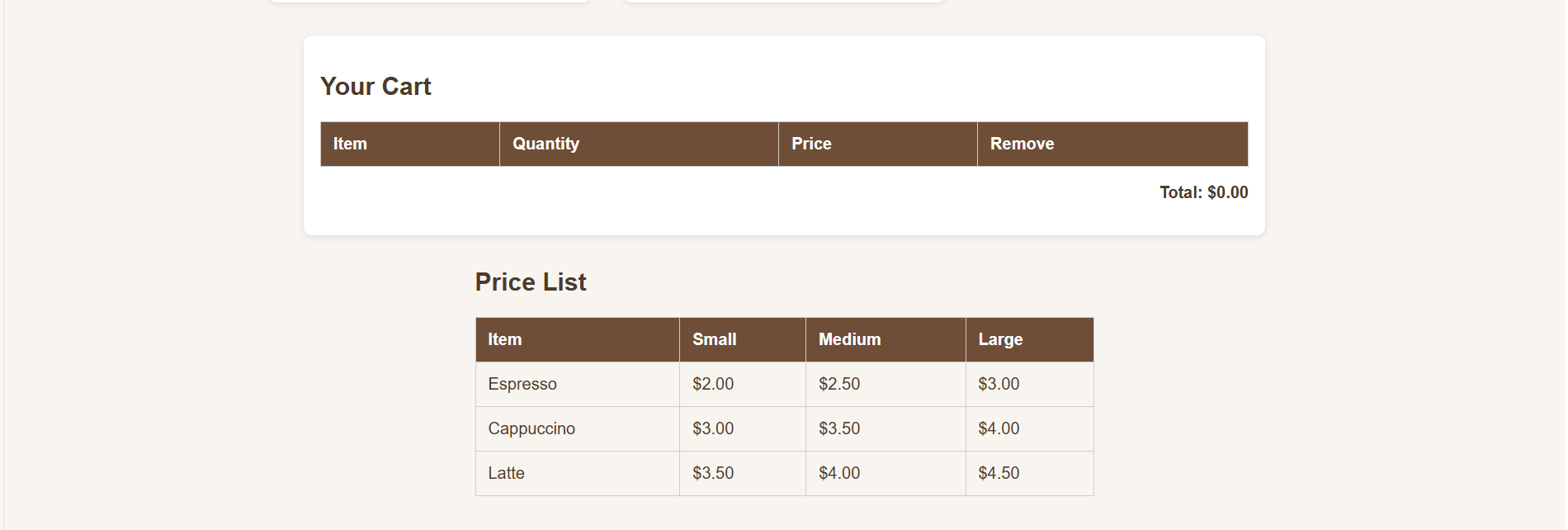
**<p>© 2024 Coffee Shop. Visit our <a href="https://www.coffeeshop.com" target="\_blank" rel="noopener noreferrer">website</a>.</p>**

**</footer>**

**</body>**

**</html>**

**Output**

****

**Experiment 7**

## **Problem Statement**

A coffee shop website needs a secure and efficient way to register new users. Currently, there is no backend system to:

* Validate user inputs (e.g., proper email format, password strength).
* Check for duplicate accounts (prevent multiple registrations with the same email).
* Securely store user data in a database.
* Provide feedback (success/error messages) during registration.

Without this, the website cannot ensure data integrity, prevent spam registrations, or offer a smooth signup experience.

## **Introduction**

This PHP script will:  
✔ **Process registration form submissions** (name, email, password, etc.).  
✔ **Validate inputs** (required fields, email format, password strength).  
✔ **Check for existing users** to prevent duplicates.  
✔ **Securely hash passwords** before storing them in a database.  
✔ **Provide feedback** (success message or error alerts).  
✔ **Redirect users** to a login page upon successful registration.

The script ensures **security** (password hashing, input sanitization) and **user-friendliness** (clear error messages).

## **Objectives**

1. **Form Handling**
   * Capture user inputs (name, email, password, etc.).
   * Sanitize and validate data to prevent SQL injection/XSS attacks.
2. **Validation & Error Handling**
   * Check for empty fields, valid email format, and password strength.
   * Detect duplicate email registrations.
   * Return descriptive error messages if validation fails.
3. **Database Integration**
   * Securely store user data in MySQL (or another database).
   * Hash passwords using password\_hash() for security.
4. **User Feedback & Redirection**
   * Display success/error messages on the registration page.
   * Redirect to the login page after successful registration.

### Expected Workflow

1. User fills out the registration form → Submits data.
2. PHP validates inputs → Checks for duplicates.
3. If valid → Stores data in DB → Redirects to login.
4. If invalid → Shows errors → Asks for corrections.

**Code**

**<?php**

**// Simple user registration script for Coffee Shop website**

**// Function to sanitize input data**

**function sanitize\_input($data) {**

**return htmlspecialchars(stripslashes(trim($data)));**

**}**

**// Initialize variables and error messages**

**$name = $email = $password = $confirm\_password = "";**

**$errors = [];**

**if ($\_SERVER["REQUEST\_METHOD"] == "POST") {**

**// Validate name**

**if (empty($\_POST["name"])) {**

**$errors[] = "Name is required.";**

**} else {**

**$name = sanitize\_input($\_POST["name"]);**

**if (!preg\_match("/^[a-zA-Z-' ]\*$/", $name)) {**

**$errors[] = "Only letters and white space allowed in name.";**

**}**

**}**

**// Validate email**

**if (empty($\_POST["email"])) {**

**$errors[] = "Email is required.";**

**} else {**

**$email = sanitize\_input($\_POST["email"]);**

**if (!filter\_var($email, FILTER\_VALIDATE\_EMAIL)) {**

**$errors[] = "Invalid email format.";**

**}**

**}**

**// Validate password**

**if (empty($\_POST["password"])) {**

**$errors[] = "Password is required.";**

**} else {**

**$password = $\_POST["password"];**

**if (strlen($password) < 6) {**

**$errors[] = "Password must be at least 6 characters.";**

**}**

**}**

**// Validate confirm password**

**if (empty($\_POST["confirm\_password"])) {**

**$errors[] = "Confirm password is required.";**

**} else {**

**$confirm\_password = $\_POST["confirm\_password"];**

**if ($password !== $confirm\_password) {**

**$errors[] = "Passwords do not match.";**

**}**

**}**

**// If no errors, proceed to register user**

**if (empty($errors)) {**

**// For demonstration, save user data to a file (users.txt)**

**// In production, use a database and hash passwords securely**

**$userData = $name . "," . $email . "," . password\_hash($password, PASSWORD\_DEFAULT) . "\n";**

**$file = fopen("users.txt", "a");**

**if ($file) {**

**fwrite($file, $userData);**

**fclose($file);**

**// Redirect to login page or show success message**

**header("Location: coffee-shop.html#login?registered=1");**

**exit();**

**} else {**

**$errors[] = "Failed to save user data. Please try again later.";**

**}**

**}**

**}**

**?>**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<title>Register - Coffee Shop</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #f8f4f0;**

**color: #4b3b2b;**

**padding: 2rem;**

**}**

**.form-container {**

**max-width: 400px;**

**margin: auto;**

**background: white;**

**padding: 1rem;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #6f4e37;**

**}**

**label {**

**display: block;**

**margin-top: 1rem;**

**font-weight: bold;**

**}**

**input[type="text"],**

**input[type="email"],**

**input[type="password"] {**

**width: 100%;**

**padding: 0.5rem;**

**margin-top: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**input[type="submit"] {**

**margin-top: 1.5rem;**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**.error {**

**color: red;**

**margin-top: 1rem;**

**}**

**.success {**

**color: green;**

**margin-top: 1rem;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="form-container">**

**<h2>Register</h2>**

**<?php**

**if (!empty($errors)) {**

**echo '<div class="error"><ul>';**

**foreach ($errors as $error) {**

**echo "<li>" . $error . "</li>";**

**}**

**echo '</ul></div>';**

**}**

**?>**

**<form method="post" action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]); ?>">**

**<label for="name">Name:</label>**

**<input type="text" id="name" name="name" value="<?php echo htmlspecialchars($name); ?>" required />**

**<label for="email">Email:</label>**

**<input type="email" id="email" name="email" value="<?php echo htmlspecialchars($email); ?>" required />**

**<label for="password">Password:</label>**

**<input type="password" id="password" name="password" required />**

**<label for="confirm\_password">Confirm Password:</label>**

**<input type="password" id="confirm\_password" name="confirm\_password" required />**

**<input type="submit" value="Register" />**

**</form>**

**</div>**

**</body>**

**</html>**

**Experiment 8**

## **Problem Statement**

The coffee shop website currently lacks a secure and user-friendly login system, resulting in:

* No authentication mechanism for registered users
* Inability to provide personalized experiences (order history, preferences)
* Poor user experience with no feedback for login failures
* No session management for maintaining logged-in state

This creates security risks and prevents the website from offering account-specific features to customers.

## **Introduction**

This PHP login system implementation will:

* Authenticate users using email and password credentials
* Validate inputs and verify against database records
* Maintain secure sessions using PHP session management
* Provide clear feedback for both successful and failed login attempts
* Redirect authenticated users to a personalized dashboard

The solution focuses on security (password hashing, session protection) while maintaining excellent user experience through intuitive feedback and navigation.

## **Objectives**

1. **Secure Authentication**
   * Verify user credentials against database records
   * Implement password hashing verification
   * Prevent SQL injection through prepared statements
2. **User Experience**
   * Provide real-time feedback for login attempts
   * Display personalized welcome messages
   * Maintain session state across pages
3. **Error Handling**
   * Detect and communicate various failure cases:
     + Incorrect password
     + Non-existent email
     + Empty fields
   * Prevent brute force attacks
4. **Session Management**
   * Create secure PHP sessions upon login
   * Store minimal user data in sessions
   * Implement proper logout functionality
5. **Redirection Flow**
   * Redirect to dashboard on success
   * Return to login page with errors on failure
   * Prevent access to protected pages without authentication

**Code**

**<?php**

**session\_start();**

**// Function to sanitize input data**

**function sanitize\_input($data) {**

**return htmlspecialchars(stripslashes(trim($data)));**

**}**

**$email = $password = "";**

**$error = "";**

**if ($\_SERVER["REQUEST\_METHOD"] == "POST") {**

**// Validate email**

**if (empty($\_POST["email"])) {**

**$error = "Email is required.";**

**} else {**

**$email = sanitize\_input($\_POST["email"]);**

**if (!filter\_var($email, FILTER\_VALIDATE\_EMAIL)) {**

**$error = "Invalid email format.";**

**}**

**}**

**// Validate password**

**if (empty($\_POST["password"])) {**

**$error = "Password is required.";**

**} else {**

**$password = $\_POST["password"];**

**}**

**if (empty($error)) {**

**// Check credentials against users.txt**

**$found = false;**

**if (file\_exists("users.txt")) {**

**$file = fopen("users.txt", "r");**

**if ($file) {**

**while (($line = fgets($file)) !== false) {**

**list($name, $storedEmail, $hashedPassword) = explode(",", trim($line));**

**if ($email === $storedEmail && password\_verify($password, $hashedPassword)) {**

**$found = true;**

**$\_SESSION["user\_name"] = $name;**

**$\_SESSION["user\_email"] = $email;**

**break;**

**}**

**}**

**fclose($file);**

**} else {**

**$error = "Unable to read user data. Please try again later.";**

**}**

**} else {**

**$error = "No registered users found. Please register first.";**

**}**

**if ($found) {**

**// Redirect to home page or welcome page**

**header("Location: coffee-shop.html?login=success");**

**exit();**

**} else {**

**$error = "Incorrect email or password.";**

**}**

**}**

**}**

**?>**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<title>Login - Coffee Shop</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #f8f4f0;**

**color: #4b3b2b;**

**padding: 2rem;**

**}**

**.form-container {**

**max-width: 400px;**

**margin: auto;**

**background: white;**

**padding: 1rem;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #6f4e37;**

**}**

**label {**

**display: block;**

**margin-top: 1rem;**

**font-weight: bold;**

**}**

**input[type="email"],**

**input[type="password"] {**

**width: 100%;**

**padding: 0.5rem;**

**margin-top: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**input[type="submit"] {**

**margin-top: 1.5rem;**

**background-color: #6f4e37;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**}**

**input[type="submit"]:hover {**

**background-color: #a67c52;**

**}**

**.error {**

**color: red;**

**margin-top: 1rem;**

**}**

**.success {**

**color: green;**

**margin-top: 1rem;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="form-container">**

**<h2>Login</h2>**

**<?php**

**if (!empty($error)) {**

**echo '<div class="error">' . $error . '</div>';**

**}**

**?>**

**<form method="post" action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]); ?>">**

**<label for="email">Email:</label>**

**<input type="email" id="email" name="email" value="<?php echo htmlspecialchars($email); ?>" required />**

**<label for="password">Password:</label>**

**<input type="password" id="password" name="password" required />**

**<input type="submit" value="Login" />**

**</form>**

**</div>**

**</body>**

**</html>**

**Cake Shop Project**

**Experiment 1**

## **Problem Statement**

Existing cake shop websites often suffer from:

* Poor navigation – Customers struggle to find products or contact information
* Lack of visual appeal – Unattractive designs fail to showcase cakes effectively
* No online ordering – Customers can't browse or order cakes digitally
* Outdated information – No updates on seasonal specials or new flavors
* Weak branding – Inconsistent colors, fonts, and imagery

This leads to lost sales and poor customer engagement.

## **Introduction**

This project creates a **modern, user-friendly cake shop website** with:  
✔ **Responsive design** – Works on mobile, tablet, and desktop  
✔ **Online menu & ordering** – Customers can browse cakes and place orders  
✔ **Strong branding** – Consistent colors, fonts, and logo  
✔ **Engaging content** – High-quality images, blog posts, and testimonials  
✔ **Easy navigation** – Clear menu structure for a seamless experience

The goal is to **increase online orders** and **enhance customer interaction**.

## **Objectives**

### 1. Website Goals

* Showcase cakes with **high-quality images**
* Allow customers to **order online**
* Provide **contact information & location**
* Share **customer reviews & testimonials**
* Offer **blog content** (cake tips, recipes, seasonal specials)

### 2. Deliverables

1. **Homepage** – Hero banner, featured cakes, quick links
2. **About Page** – Shop story, baker introduction
3. **Menu/Products Page** – Cake categories with prices
4. **Testimonials Page** – Customer reviews & ratings
5. **Contact Page** – Form, map, phone/email
6. **Blog Section** – Baking tips, new flavors, promotions

### 3. Target Audience

* **Local customers** looking for birthday/wedding cakes
* **Event planners** needing bulk orders
* **Cake enthusiasts** interested in recipes & tips

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Home</title>**

**<link rel="stylesheet" href="styles.css" />**

**</head>**

**<body>**

**<header>**

**<div class="container">**

**<h1 class="logo">Sweet Delights Cake Shop</h1>**

**<nav>**

**<ul class="nav-links">**

**<li><a href="#featured-cakes">Featured Cakes</a></li>**

**<li><a href="#about-preview">About Us</a></li>**

**<li><a href="#testimonials">Testimonials</a></li>**

**<li><a href="#contact">Contact</a></li>**

**<li><a href="#blog">Blog</a></li>**

**</ul>**

**</nav>**

**</div>**

**</header>**

**<section id="hero" class="hero-banner">**

**<div class="container">**

**<h2>Order Today – 10% Off First Cake!</h2>**

**<p>Delicious custom cakes made fresh for your special moments.</p>**

**<a href="#featured-cakes" class="btn-primary">Order Now</a>**

**</div>**

**</section>**

**<section id="featured-cakes" class="section">**

**<div class="container">**

**<h2>Featured Cakes</h2>**

**<div class="cake-grid">**

**<div class="cake-card">**

**<img src="images/chocolate-cake.jpg" alt="Chocolate Cake" />**

**<h3>Chocolate Fudge Cake</h3>**

**<p>Rich and moist chocolate cake with fudge frosting.</p>**

**<button class="btn-secondary">Order Now</button>**

**</div>**

**<div class="cake-card">**

**<img src="images/vanilla-cake.jpg" alt="Vanilla Cake" />**

**<h3>Classic Vanilla Cake</h3>**

**<p>Light and fluffy vanilla cake with buttercream icing.</p>**

**<button class="btn-secondary">Order Now</button>**

**</div>**

**<div class="cake-card">**

**<img src="images/red-velvet.jpg" alt="Red Velvet Cake" />**

**<h3>Red Velvet Cake</h3>**

**<p>Velvety red cake with cream cheese frosting.</p>**

**<button class="btn-secondary">Order Now</button>**

**</div>**

**</div>**

**</div>**

**</section>**

**<section id="about-preview" class="section about-preview">**

**<div class="container">**

**<h2>About Us</h2>**

**<p>Sweet Delights started as a small family bakery with a passion for creating beautiful and delicious cakes. Our commitment to quality and customer satisfaction has made us a favorite in the community.</p>**

**<a href="about.html" class="btn-primary">Learn More</a>**

**</div>**

**</section>**

**<section id="testimonials" class="section testimonials">**

**<div class="container">**

**<h2>Customer Testimonials</h2>**

**<div class="testimonial-cards">**

**<div class="testimonial-card">**

**<p>"The chocolate fudge cake was amazing! Everyone loved it at my party."</p>**

**<h4>- Sarah M.</h4>**

**<div class="rating">★★★★★</div>**

**</div>**

**<div class="testimonial-card">**

**<p>"Beautifully decorated and delicious vanilla cake. Highly recommend!"</p>**

**<h4>- James T.</h4>**

**<div class="rating">★★★★☆</div>**

**</div>**

**<div class="testimonial-card">**

**<p>"Red velvet cake was moist and flavorful. Will order again."</p>**

**<h4>- Emily R.</h4>**

**<div class="rating">★★★★★</div>**

**</div>**

**</div>**

**</div>**

**</section>**

**<footer>**

**<div class="container">**

**<p>© 2024 Sweet Delights Cake Shop. All rights reserved.</p>**

**</div>**

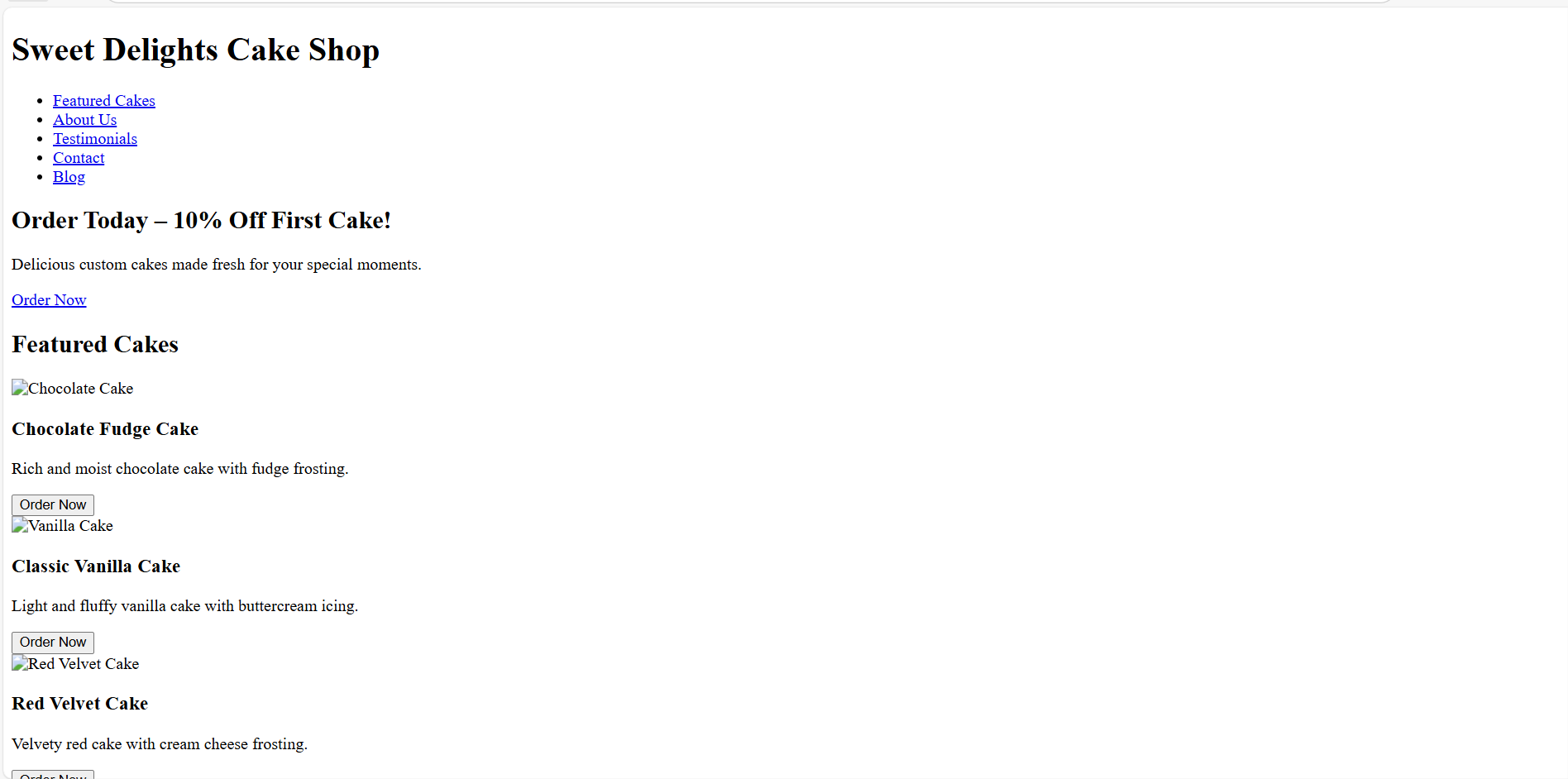
**</footer>**

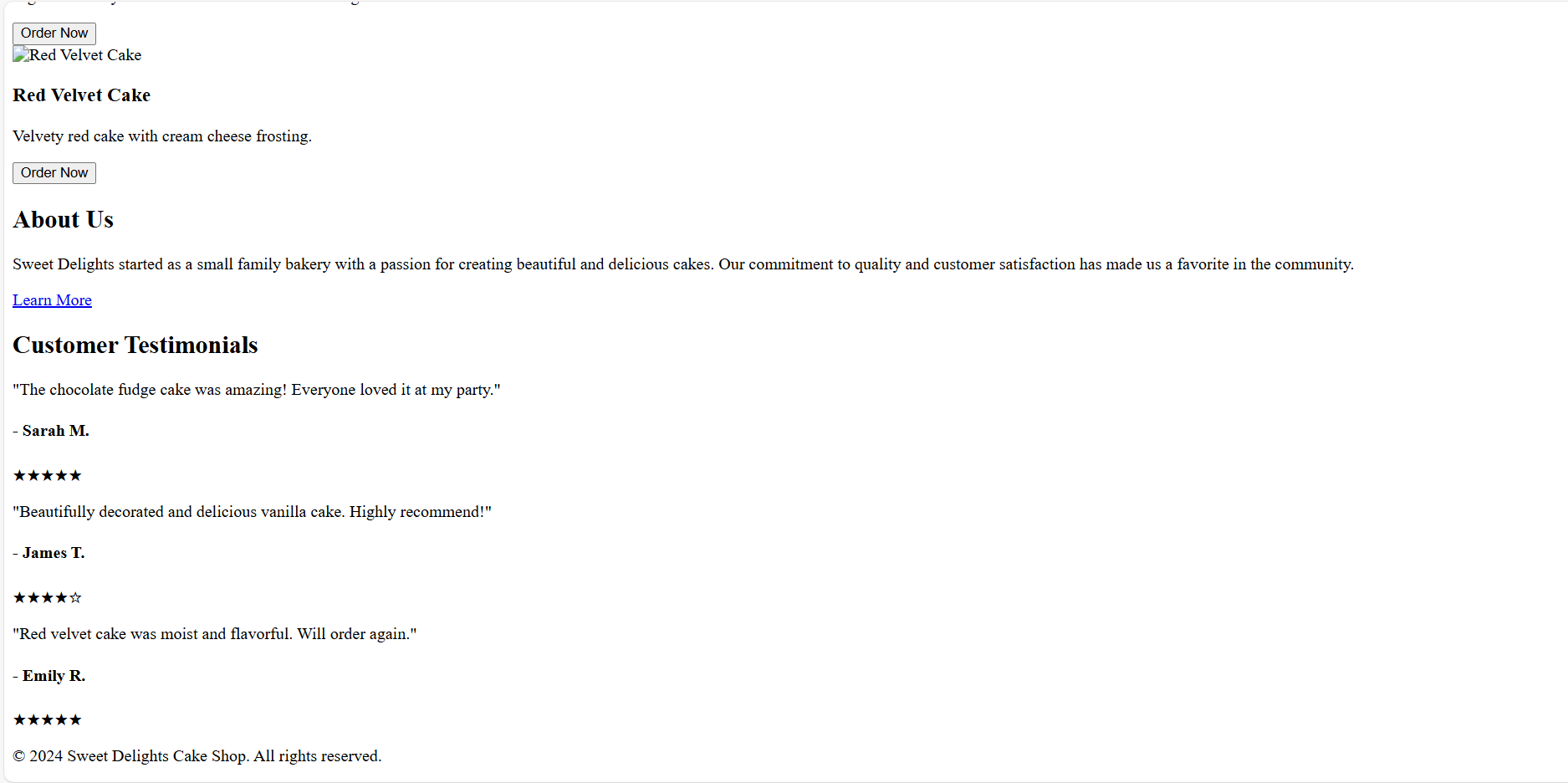
**<script src="script.js"></script>**

**</body>**

**</html>**

**Output**

****

****

**Experiment 2**

## **Problem Statement**

Existing cake shop websites often fail to provide:

* An engaging online presence that showcases products effectively
* User-friendly ordering systems for customers
* Proper content organization (categories, filters, search)
* Mobile-responsive designs that work across devices
* Secure admin/user portals for order management

This results in lost sales opportunities and poor customer retention.

## **Introduction**

This project develops a complete cake shop website with:

* Customer-facing pages (Home, Menu, Cart, About, Contact)
* User authentication (Registration & Login)
* Admin dashboard for order/content management
* Modern UI/UX design for optimal customer experience
* Responsive layout for all device types

The solution will boost online orders while providing easy management for shop owners.

## **Objectives**

### 1. Customer-Facing Pages

| **Page** | **Key Features** |
| --- | --- |
| **Home** | Hero banner, featured cakes, promotions, testimonials |
| **Menu** | Categorized products (birthday, wedding, etc.), filters, search |
| **Cart** | Item review, quantity adjustment, checkout button |
| **About** | Shop history, mission, team bios |
| **Contact** | Contact form, location map, social media links |

### 2. User System

| **Feature** | **Description** |
| --- | --- |
| **Registration** | Email, password, personal details |
| **Login** | Secure authentication with session management |
| **Password Recovery** | Forgot password functionality |

### 3. Admin Features

| **Feature** | **Purpose** |
| --- | --- |
| **Product Management** | Add/edit/remove cakes |
| **Order Management** | View/update order statuses |
| **Content Updates** | Modify homepage banners, blog posts |

### 4. Technical Implementation

* **Frontend:** HTML5, CSS3, JavaScript (React/Vue optional)
* **Backend:** PHP/Node.js with MySQL database
* **Security:** Password hashing, CSRF protection
* **Hosting:** Shared hosting with SSL certificate

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Home</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**header {**

**background-color: #d2691e;**

**color: white;**

**padding: 1rem 2rem;**

**display: flex;**

**justify-content: space-between;**

**align-items: center;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**display: flex;**

**gap: 1rem;**

**margin: 0;**

**padding: 0;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #b3540e;**

**}**

**.hero {**

**background-image: url('images/hero-cake.jpg');**

**background-size: cover;**

**background-position: center;**

**height: 400px;**

**display: flex;**

**flex-direction: column;**

**justify-content: center;**

**align-items: center;**

**color: white;**

**text-shadow: 1px 1px 4px rgba(0,0,0,0.7);**

**text-align: center;**

**padding: 0 1rem;**

**}**

**.hero h2 {**

**font-size: 2.5rem;**

**margin-bottom: 0.5rem;**

**}**

**.hero p {**

**font-size: 1.2rem;**

**margin-bottom: 1rem;**

**}**

**.btn-primary {**

**background-color: #d2691e;**

**color: white;**

**padding: 0.7rem 1.5rem;**

**border: none;**

**border-radius: 4px;**

**font-weight: bold;**

**cursor: pointer;**

**text-decoration: none;**

**}**

**.btn-primary:hover {**

**background-color: #b3540e;**

**}**

**.featured {**

**max-width: 1000px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**.featured h2 {**

**text-align: center;**

**color: #d2691e;**

**margin-bottom: 2rem;**

**}**

**.featured-items {**

**display: grid;**

**grid-template-columns: repeat(auto-fit, minmax(280px, 1fr));**

**gap: 2rem;**

**}**

**.featured-item {**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**padding: 1rem;**

**text-align: center;**

**}**

**.featured-item img {**

**width: 100%;**

**height: 180px;**

**object-fit: cover;**

**border-radius: 8px;**

**margin-bottom: 1rem;**

**}**

**.featured-item h3 {**

**margin-bottom: 0.5rem;**

**color: #5a3e1b;**

**}**

**.featured-item p {**

**font-size: 0.9rem;**

**color: #7a5a3a;**

**margin-bottom: 1rem;**

**}**

**.testimonials {**

**background-color: #fff3e6;**

**padding: 2rem 1rem;**

**max-width: 900px;**

**margin: 2rem auto;**

**border-radius: 8px;**

**}**

**.testimonials h2 {**

**text-align: center;**

**color: #d2691e;**

**margin-bottom: 1.5rem;**

**}**

**.testimonial-list {**

**display: flex;**

**flex-wrap: wrap;**

**gap: 1rem;**

**justify-content: center;**

**}**

**.testimonial {**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**padding: 1rem;**

**max-width: 280px;**

**font-style: italic;**

**color: #5a3e1b;**

**}**

**.testimonial strong {**

**display: block;**

**margin-top: 1rem;**

**color: #d2691e;**

**font-style: normal;**

**}**

**footer {**

**background-color: #d2691e;**

**color: white;**

**text-align: center;**

**padding: 1rem;**

**margin-top: 3rem;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Cake Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="index.html" class="active">Home</a></li>**

**<li><a href="menu.html">Menu</a></li>**

**<li><a href="cart.html">Cart</a></li>**

**<li><a href="about.html">About Us</a></li>**

**<li><a href="contact.html">Contact</a></li>**

**<li><a href="register.html">Register</a></li>**

**<li><a href="login.html">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<section class="hero">**

**<h2>Order Today – 10% Off First Cake!</h2>**

**<p>Delicious custom cakes made fresh for your special moments.</p>**

**<a href="menu.html" class="btn-primary">Order Now</a>**

**</section>**

**<section class="featured">**

**<h2>Featured Cakes</h2>**

**<div class="featured-items">**

**<div class="featured-item">**

**<img src="images/chocolate-cake.jpg" alt="Chocolate Cake" />**

**<h3>Chocolate Fudge Cake</h3>**

**<p>Rich and moist chocolate cake with fudge frosting.</p>**

**</div>**

**<div class="featured-item">**

**<img src="images/vanilla-cake.jpg" alt="Vanilla Cake" />**

**<h3>Classic Vanilla Cake</h3>**

**<p>Light and fluffy vanilla cake with buttercream icing.</p>**

**</div>**

**<div class="featured-item">**

**<img src="images/red-velvet.jpg" alt="Red Velvet Cake" />**

**<h3>Red Velvet Cake</h3>**

**<p>Velvety red cake with cream cheese frosting.</p>**

**</div>**

**</div>**

**</section>**

**<section class="testimonials">**

**<h2>Customer Testimonials</h2>**

**<div class="testimonial-list">**

**<div class="testimonial">**

**"The chocolate fudge cake was amazing! Everyone loved it at my party."**

**<strong>- Sarah M.</strong>**

**</div>**

**<div class="testimonial">**

**"Beautifully decorated and delicious vanilla cake. Highly recommend!"**

**<strong>- James T.</strong>**

**</div>**

**<div class="testimonial">**

**"Red velvet cake was moist and flavorful. Will order again."**

**<strong>- Emily R.</strong>**

**</div>**

**</div>**

**</section>**

**<footer>**

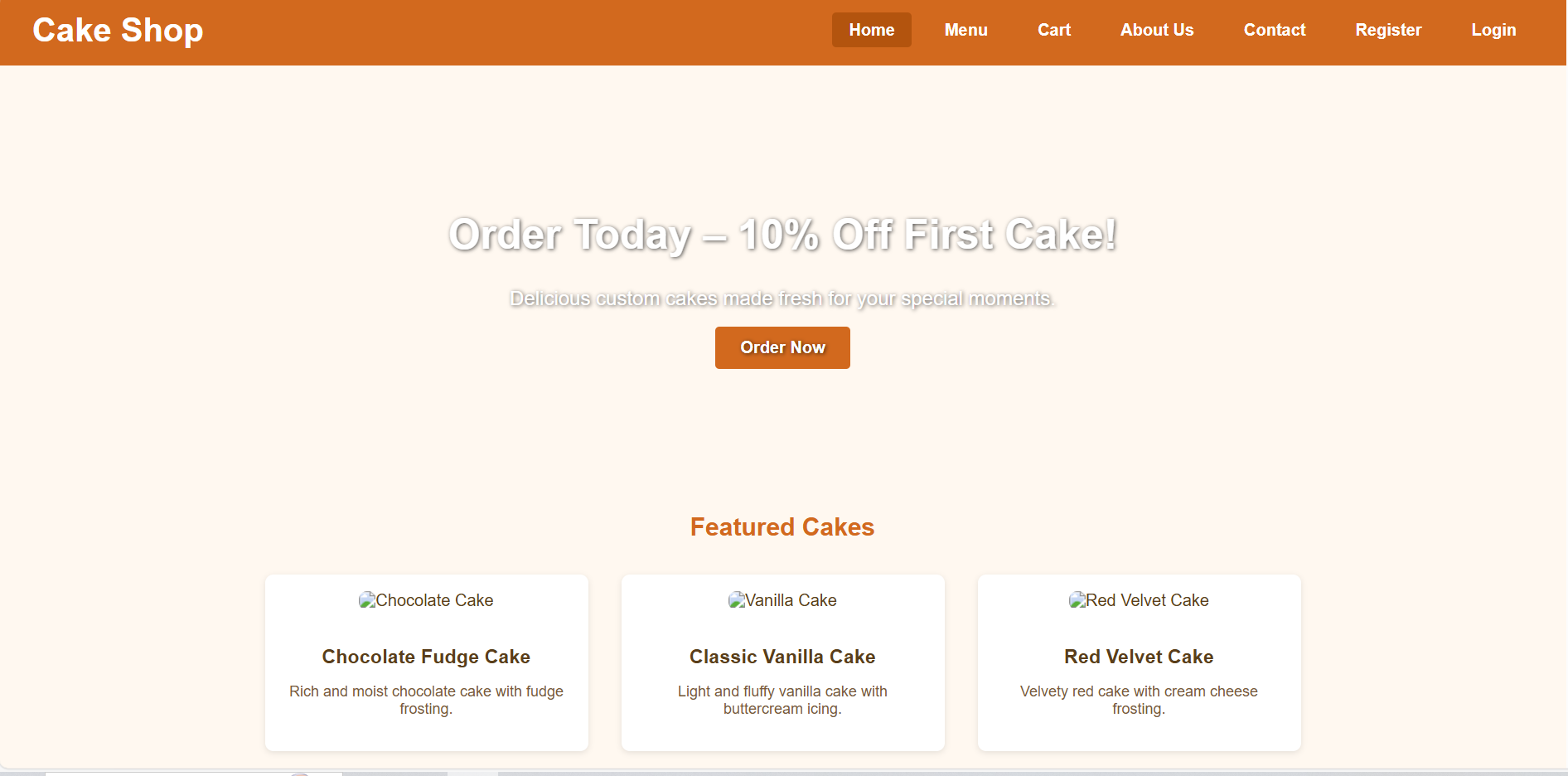
**<p>© 2024 Cake Shop. All rights reserved.</p>**

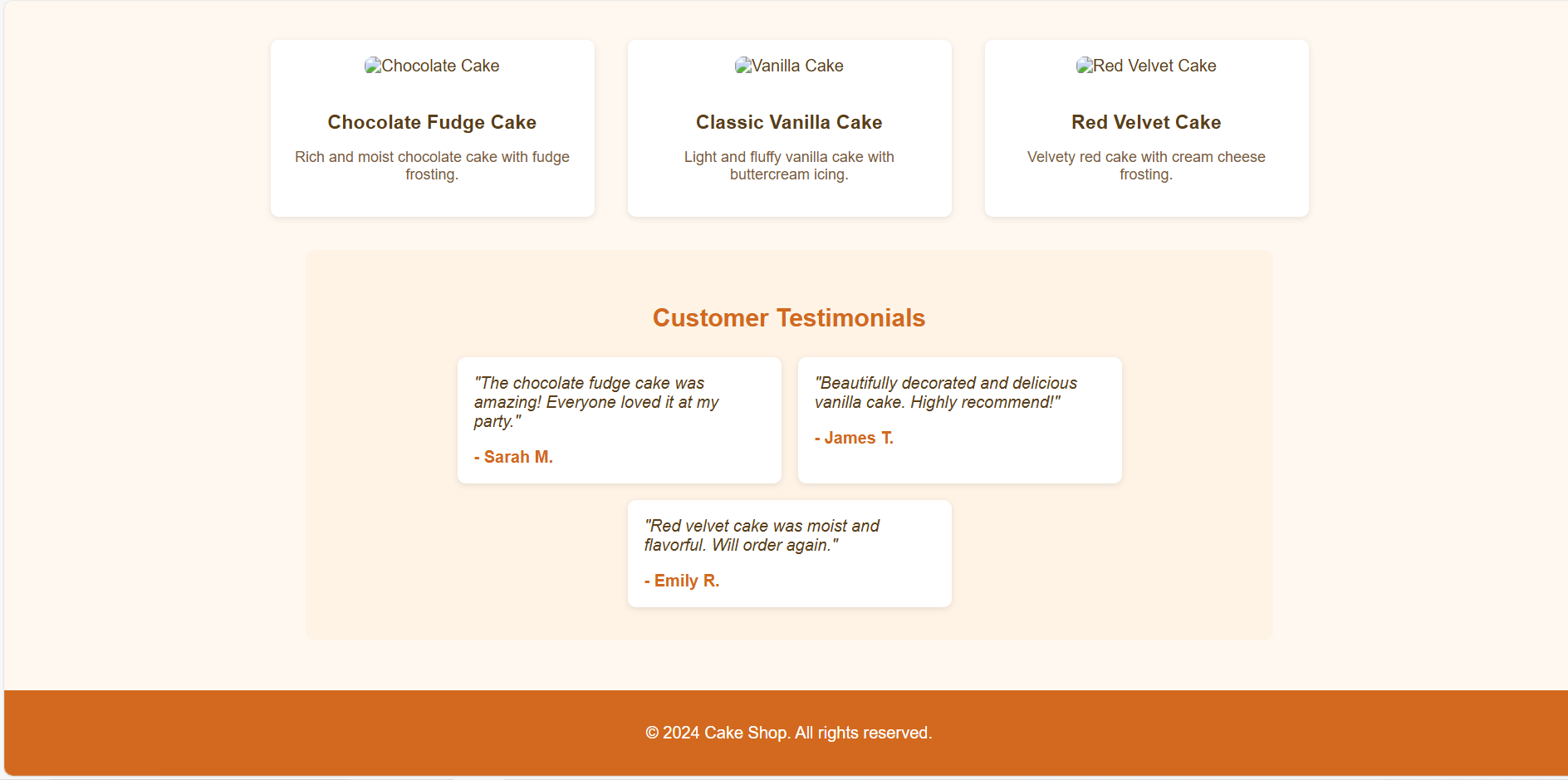
**</footer>**

**</body>**

**</html>**

**Output**

****

****

**Experiment 3**

## **Problem Statement**

The current cake shop website suffers from:

* Unstructured layouts that make content hard to browse
* Inconsistent spacing between menu items and sections
* Poor visual hierarchy for product categories
* Non-responsive designs that break on different devices
* Lack of modern aesthetics in presenting coffee products

These issues create a suboptimal user experience that fails to showcase the coffee shop's offerings effectively.

## **Introduction**

This enhancement implements CSS Grid to:  
1. Create **visually appealing** and **well-organized** layouts  
2. Establish **clear visual hierarchy** for menu categories  
3. Implement **fully responsive** designs for all devices  
4. Improve **user engagement** through better product presentation  
5. Maintain **brand consistency** across all sections

The solution focuses on structural improvements while preserving the existing branding and content.

## **Objectives**

### 1. Home Page Grid Layout

* Implement a **multi-column grid** for featured items
* Create **distinct sections** (hero, featured products, testimonials)
* Ensure **proper spacing** between grid elements
* Maintain **visual balance** across all screen sizes

### 2. Menu/Product Page Grid

* **Categorize products** (Hot Drinks, Cold Brews, Pastries)
* **Standardize card sizes** for uniform appearance
* **Highlight bestsellers** with visual indicators
* **Optimize image-text ratio** for quick scanning

### 3. Visual Enhancements

| **Element** | **Improvement** |
| --- | --- |
| **Headings** | Consistent typography with category separators |
| **Spacing** | Uniform gutters and margins between items |
| **Images** | Aspect-ratio constrained product photos |
| **Prices** | Prominent display with currency formatting |
| **Descriptions** | Readable line-lengths and font sizes |

### 4. Responsive Behavior

* **Mobile (1 column)**: Stacked layout for small screens
* **Tablet (2 columns)**: Balanced product display
* **Desktop (3-4 columns)**: Maximize screen real estate
* **Large screens**: Constrain max-width for readability.

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Menu</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**header {**

**background-color: #d2691e;**

**color: white;**

**padding: 1rem 2rem;**

**display: flex;**

**justify-content: space-between;**

**align-items: center;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**display: flex;**

**gap: 1rem;**

**margin: 0;**

**padding: 0;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #b3540e;**

**}**

**main {**

**max-width: 1100px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**}**

**h2.category-title {**

**border-bottom: 2px solid #d2691e;**

**padding-bottom: 0.5rem;**

**margin-bottom: 1rem;**

**color: #d2691e;**

**}**

**.cake-grid {**

**display: grid;**

**grid-template-columns: repeat(auto-fit, minmax(280px, 1fr));**

**gap: 2rem;**

**margin-bottom: 3rem;**

**}**

**.cake-card {**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 6px rgba(0,0,0,0.1);**

**padding: 1rem;**

**display: grid;**

**grid-template-columns: 100px 1fr;**

**gap: 1rem;**

**align-items: center;**

**}**

**.cake-card img {**

**width: 100px;**

**height: 100px;**

**object-fit: cover;**

**border-radius: 8px;**

**}**

**.cake-details {**

**display: flex;**

**flex-direction: column;**

**gap: 0.3rem;**

**}**

**.cake-name {**

**font-weight: bold;**

**font-size: 1.1rem;**

**color: #5a3e1b;**

**}**

**.cake-description {**

**font-size: 0.9rem;**

**color: #7a5a3a;**

**}**

**.cake-price {**

**font-weight: bold;**

**color: #d2691e;**

**font-size: 1rem;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Cake Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="index.html">Home</a></li>**

**<li><a href="menu.html" class="active">Menu</a></li>**

**<li><a href="cart.html">Cart</a></li>**

**<li><a href="about.html">About Us</a></li>**

**<li><a href="contact.html">Contact</a></li>**

**<li><a href="register.html">Register</a></li>**

**<li><a href="login.html">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<main>**

**<section>**

**<h2 class="category-title">Birthday Cakes</h2>**

**<div class="cake-grid">**

**<div class="cake-card">**

**<img src="images/birthday-chocolate.jpg" alt="Birthday Chocolate Cake" />**

**<div class="cake-details">**

**<div class="cake-name">Chocolate Birthday Cake</div>**

**<div class="cake-description">Rich chocolate cake with colorful sprinkles and candles.</div>**

**<div class="cake-price">$45.00</div>**

**</div>**

**</div>**

**<div class="cake-card">**

**<img src="images/birthday-vanilla.jpg" alt="Birthday Vanilla Cake" />**

**<div class="cake-details">**

**<div class="cake-name">Vanilla Birthday Cake</div>**

**<div class="cake-description">Classic vanilla cake with buttercream frosting and decorations.</div>**

**<div class="cake-price">$40.00</div>**

**</div>**

**</div>**

**</div>**

**</section>**

**<section>**

**<h2 class="category-title">Wedding Cakes</h2>**

**<div class="cake-grid">**

**<div class="cake-card">**

**<img src="images/wedding-white.jpg" alt="Wedding White Cake" />**

**<div class="cake-details">**

**<div class="cake-name">Elegant White Wedding Cake</div>**

**<div class="cake-description">Multi-tiered white cake with delicate floral designs.</div>**

**<div class="cake-price">$250.00</div>**

**</div>**

**</div>**

**<div class="cake-card">**

**<img src="images/wedding-chocolate.jpg" alt="Wedding Chocolate Cake" />**

**<div class="cake-details">**

**<div class="cake-name">Chocolate Wedding Cake</div>**

**<div class="cake-description">Decadent chocolate cake with rich ganache and decorations.</div>**

**<div class="cake-price">$275.00</div>**

**</div>**

**</div>**

**</div>**

**</section>**

**<section>**

**<h2 class="category-title">Cupcakes</h2>**

**<div class="cake-grid">**

**<div class="cake-card">**

**<img src="images/cupcake-vanilla.jpg" alt="Vanilla Cupcake" />**

**<div class="cake-details">**

**<div class="cake-name">Vanilla Cupcake</div>**

**<div class="cake-description">Light vanilla cupcake topped with buttercream frosting.</div>**

**<div class="cake-price">$3.50 each</div>**

**</div>**

**</div>**

**<div class="cake-card">**

**<img src="images/cupcake-chocolate.jpg" alt="Chocolate Cupcake" />**

**<div class="cake-details">**

**<div class="cake-name">Chocolate Cupcake</div>**

**<div class="cake-description">Rich chocolate cupcake with chocolate frosting.</div>**

**<div class="cake-price">$3.75 each</div>**

**</div>**

**</div>**

**</div>**

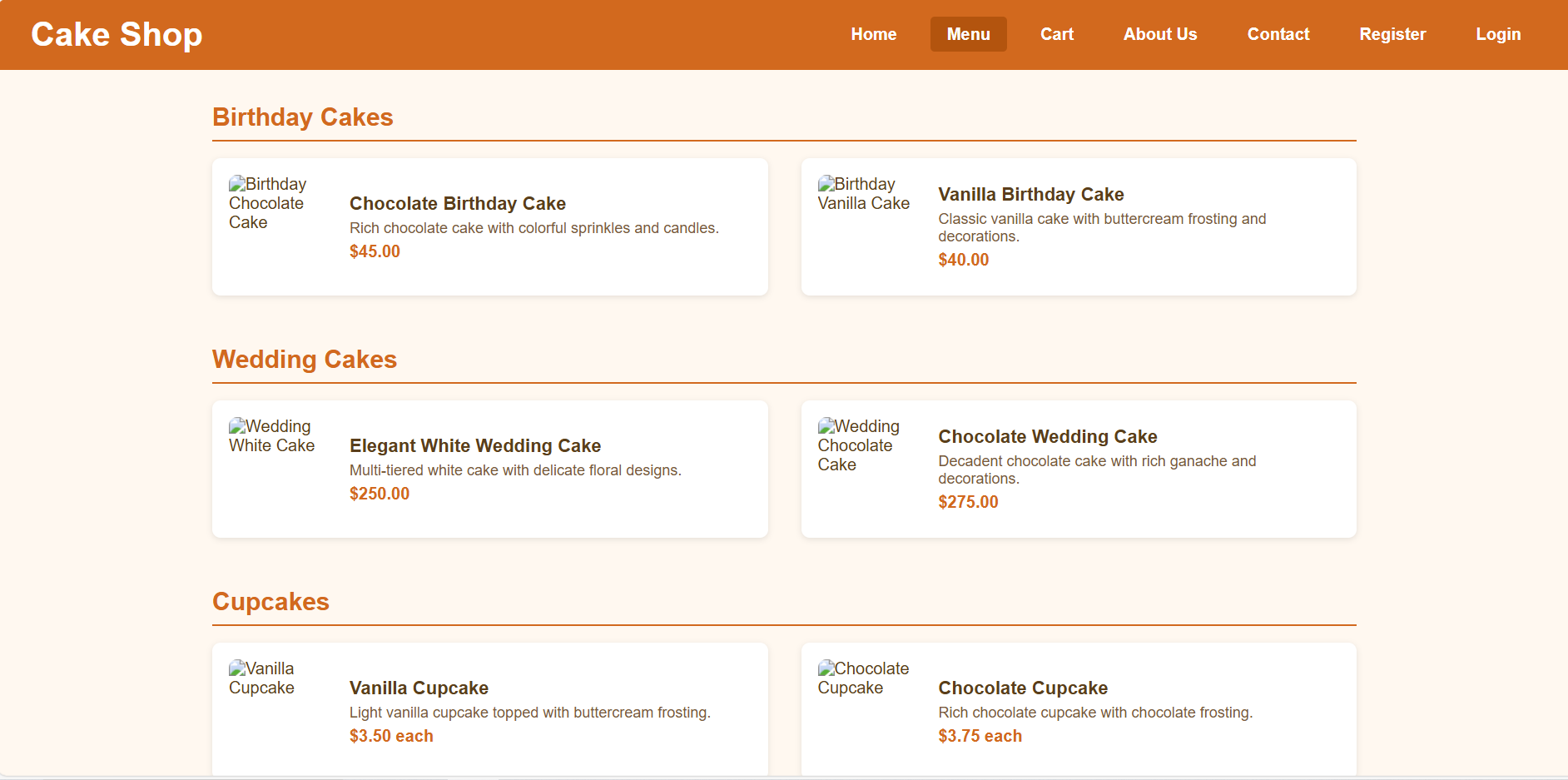
**</section>**

**</main>**

**</body>**

**</html>**

**Output**

****

**Experiment 4**

## **Problem Statement**

The current cake shop website suffers from several UI/UX deficiencies:

* Cart page lacks visual hierarchy and intuitive item management
* About Us page appears cluttered with poor content organization
* Contact form has inadequate spacing and unappealing input fields
* Registration/Login forms have inconsistent styling and poor mobile responsiveness
* Overall design fails to reflect the shop's premium brand identity

These issues create friction in the customer journey, potentially leading to abandoned carts and reduced conversions.

## **Introduction**

This enhancement project focuses on implementing modern UI principles to:  
1. **Improve visual appeal** with consistent styling across all pages  
2. **Enhance usability** through thoughtful spacing and intuitive layouts  
3. **Strengthen brand identity** with cohesive design elements  
4. **Optimize conversions** by reducing friction in key user flows  
5. **Ensure responsiveness** across all device types

The redesign will maintain all existing functionality while elevating the aesthetic and user experience quality.

## **Objectives**

### 1. Cart Page Enhancements

| **Feature** | **Improvement** |
| --- | --- |
| **Item Cards** | Consistent padding, subtle shadows, clear quantity controls |
| **Order Summary** | Fixed position for easy access, prominent CTA button |
| **Empty State** | Friendly illustration and prompt to browse products |
| **Mobile View** | Stacked layout with appropriate tap targets |

### 2. About Us Page Improvements

| **Element** | **Enhancement** |
| --- | --- |
| **Team Section** | Grid layout with circular profile images |
| **History Timeline** | Visual chronology with decorative elements |
| **Mission Statement** | Prominent display with brand colors |
| **Spacing** | Balanced whitespace between sections |

### 3. Contact Page Upgrades

| **Component** | **Update** |
| --- | --- |
| **Form Fields** | Consistent border-radius, focus states |
| **Map Integration** | Responsive embed with custom pin |
| **Contact Methods** | Visually grouped icons with labels |
| **Submission Flow** | Clear success/error messages |

### 4. Form System Standardization

| **Attribute** | **Specification** |
| --- | --- |
| **Input Fields** | 12px padding, 6px border-radius |
| **Focus States** | Brand-color outline with transition |
| **Validation** | Real-time feedback with icons |
| **Button Styles** | Consistent hover/focus effects |

### 5. Visual Design System

| **Category** | **Standards** |
| --- | --- |
| **Spacing** | 8px base unit (16px, 24px, 32px increments) |
| **Corners** | 6px radius for cards, 12px for buttons |
| **Shadows** | Subtle 2px offset for depth |
| **Transitions** | 200ms ease-in-out for interactions |

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Cart</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**header {**

**background-color: #d2691e;**

**color: white;**

**padding: 1rem 2rem;**

**display: flex;**

**justify-content: space-between;**

**align-items: center;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**display: flex;**

**gap: 1rem;**

**margin: 0;**

**padding: 0;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #b3540e;**

**}**

**main {**

**max-width: 900px;**

**margin: 2rem auto;**

**padding: 0 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 8px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #d2691e;**

**text-align: center;**

**padding: 1rem 0;**

**border-bottom: 2px solid #d2691e;**

**margin: 0;**

**}**

**table {**

**width: 100%;**

**border-collapse: collapse;**

**margin-top: 1rem;**

**}**

**th, td {**

**padding: 0.75rem;**

**border-bottom: 1px solid #ddd;**

**text-align: left;**

**}**

**th {**

**background-color: #d2691e;**

**color: white;**

**}**

**input[type="number"] {**

**width: 60px;**

**padding: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**button.remove-btn {**

**background-color: #d2691e;**

**color: white;**

**border: none;**

**padding: 0.4rem 0.8rem;**

**border-radius: 4px;**

**cursor: pointer;**

**font-weight: bold;**

**}**

**button.remove-btn:hover {**

**background-color: #b3540e;**

**}**

**.total {**

**text-align: right;**

**font-weight: bold;**

**font-size: 1.2rem;**

**padding: 1rem 0;**

**}**

**.empty-cart {**

**text-align: center;**

**padding: 2rem;**

**font-size: 1.2rem;**

**color: #7a5a3a;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Cake Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="index.html">Home</a></li>**

**<li><a href="menu.html">Menu</a></li>**

**<li><a href="cart.html" class="active">Cart</a></li>**

**<li><a href="about.html">About Us</a></li>**

**<li><a href="contact.html">Contact</a></li>**

**<li><a href="register.html">Register</a></li>**

**<li><a href="login.html">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<main>**

**<h2>Your Cart</h2>**

**<table id="cart-table">**

**<thead>**

**<tr>**

**<th>Item</th>**

**<th>Quantity</th>**

**<th>Price</th>**

**<th>Remove</th>**

**</tr>**

**</thead>**

**<tbody id="cart-items">**

**<!-- Cart items will be dynamically added here -->**

**</tbody>**

**</table>**

**<p class="total" id="cart-total">Total: $0.00</p>**

**</main>**

**<script>**

**// Cart functionality with localStorage persistence**

**let cart = [];**

**function loadCart() {**

**const cartData = localStorage.getItem("cart");**

**if (cartData) {**

**cart = JSON.parse(cartData);**

**renderCart();**

**}**

**}**

**function saveCart() {**

**localStorage.setItem("cart", JSON.stringify(cart));**

**}**

**function renderCart() {**

**const cartItemsContainer = document.getElementById("cart-items");**

**cartItemsContainer.innerHTML = "";**

**let total = 0;**

**if (cart.length === 0) {**

**cartItemsContainer.innerHTML = '<tr><td colspan="4" class="empty-cart">Your cart is empty.</td></tr>';**

**document.getElementById("cart-total").textContent = "Total: $0.00";**

**return;**

**}**

**cart.forEach((item, index) => {**

**const tr = document.createElement("tr");**

**const tdName = document.createElement("td");**

**tdName.textContent = item.name;**

**tr.appendChild(tdName);**

**const tdQuantity = document.createElement("td");**

**const quantityInput = document.createElement("input");**

**quantityInput.type = "number";**

**quantityInput.min = "1";**

**quantityInput.value = item.quantity;**

**quantityInput.addEventListener("change", (e) => {**

**const newQuantity = parseInt(e.target.value);**

**if (newQuantity > 0) {**

**cart[index].quantity = newQuantity;**

**saveCart();**

**renderCart();**

**}**

**});**

**tdQuantity.appendChild(quantityInput);**

**tr.appendChild(tdQuantity);**

**const tdPrice = document.createElement("td");**

**const price = item.price \* item.quantity;**

**tdPrice.textContent = `$${price.toFixed(2)}`;**

**tr.appendChild(tdPrice);**

**const tdRemove = document.createElement("td");**

**const removeButton = document.createElement("button");**

**removeButton.textContent = "Remove";**

**removeButton.className = "remove-btn";**

**removeButton.addEventListener("click", () => {**

**cart.splice(index, 1);**

**saveCart();**

**renderCart();**

**});**

**tdRemove.appendChild(removeButton);**

**tr.appendChild(tdRemove);**

**cartItemsContainer.appendChild(tr);**

**total += price;**

**});**

**document.getElementById("cart-total").textContent = `Total: $${total.toFixed(2)}`;**

**}**

**document.addEventListener("DOMContentLoaded", () => {**

**loadCart();**

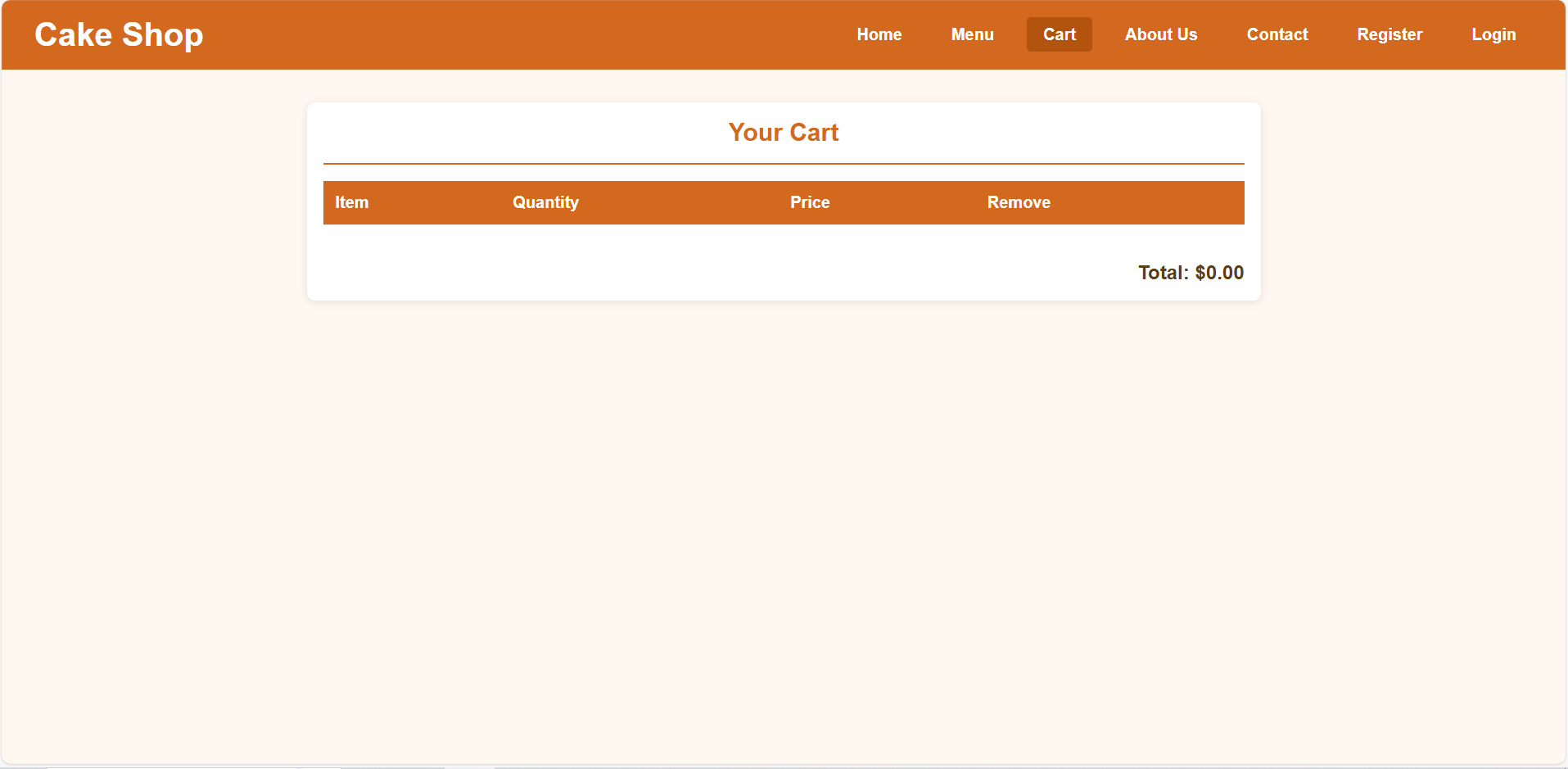
**});**

**</script>**

**</body>**

**</html>**

**Output**

****

**Experiment 5**

## **Problem Statement**

The current cake shop website lacks:

* **User accounts** preventing personalized experiences
* **Secure authentication** for order history and preferences
* **Form validation** leading to poor data quality
* **Cart functionality** forcing customers to remember selections
* **Session persistence** requiring repeated logins

This results in:  
➔ Low customer retention  
➔ Lost repeat orders  
➔ Poor user experience  
➔ Inability to track customer preferences

## **Introduction**

This implementation introduces:  
1. **Secure user registration** with data validation  
2. **Login/logout functionality** with session management  
3. **Persistent shopping cart** across sessions  
4. **Input validation** for data integrity  
5. **Personalized features** (favorites, order history)

The system balances **security** with **usability** while maintaining brand aesthetics.

## **Objectives**

### 1. User Registration System

| **Feature** | **Specification** |
| --- | --- |
| Fields | Name, Email, Password, Phone (optional) |
| Validation | Required fields, email format, password strength |
| Security | Password hashing before storage |
| Feedback | Real-time validation messages |

### 2. User Login System

| **Component** | **Requirement** |
| --- | --- |
| Credentials | Email + Password |
| Validation | Field checks, credential verification |
| Session | Persistent login state |
| Protection | Brute-force prevention |

### 3. Shopping Cart Functionality

| **Function** | **Behavior** |
| --- | --- |
| Add Item | Preserve product details + quantity |
| Update | Adjust quantities in real-time |
| Remove | Delete items with confirmation |
| Persistence | LocalStorage sync with database |

### 4. Technical Implementation

| **Layer** | **Technology** |
| --- | --- |
| Frontend | React + Formik + Yup Validation |
| Backend | Node.js/Express or PHP |
| Database | MongoDB/MySQL users table |
| Security | bcrypt hashing, JWT tokens |

### 5. User Experience

| **Flow** | **Enhancement** |
| --- | --- |
| Registration | Progressive form with clear steps |
| Login | Password visibility toggle |
| Cart | Summary always visible on desktop |
| Errors | Contextual messages near fields |

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Register</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**header {**

**background-color: #d2691e;**

**color: white;**

**padding: 1rem 2rem;**

**display: flex;**

**justify-content: space-between;**

**align-items: center;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**display: flex;**

**gap: 1rem;**

**margin: 0;**

**padding: 0;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #b3540e;**

**}**

**main {**

**max-width: 400px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 8px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #d2691e;**

**text-align: center;**

**margin-bottom: 1.5rem;**

**}**

**label {**

**display: block;**

**margin-top: 1rem;**

**font-weight: bold;**

**}**

**input[type="text"],**

**input[type="email"],**

**input[type="password"] {**

**width: 100%;**

**padding: 0.5rem;**

**margin-top: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**input[type="submit"] {**

**margin-top: 1.5rem;**

**background-color: #d2691e;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**width: 100%;**

**}**

**input[type="submit"]:hover {**

**background-color: #b3540e;**

**}**

**.error {**

**color: red;**

**margin-top: 0.5rem;**

**font-size: 0.9rem;**

**}**

**.success {**

**color: green;**

**margin-top: 0.5rem;**

**font-size: 1rem;**

**text-align: center;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Cake Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="index.html">Home</a></li>**

**<li><a href="menu.html">Menu</a></li>**

**<li><a href="cart.html">Cart</a></li>**

**<li><a href="about.html">About Us</a></li>**

**<li><a href="contact.html">Contact</a></li>**

**<li><a href="register.html" class="active">Register</a></li>**

**<li><a href="login.html">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<main>**

**<h2>User Registration</h2>**

**<form id="register-form" novalidate>**

**<label for="name">Name \*</label>**

**<input type="text" id="name" name="name" required />**

**<div class="error" id="name-error"></div>**

**<label for="email">Email \*</label>**

**<input type="email" id="email" name="email" required />**

**<div class="error" id="email-error"></div>**

**<label for="password">Password \*</label>**

**<input type="password" id="password" name="password" required minlength="6" />**

**<div class="error" id="password-error"></div>**

**<label for="confirm-password">Confirm Password \*</label>**

**<input type="password" id="confirm-password" name="confirm-password" required />**

**<div class="error" id="confirm-password-error"></div>**

**<input type="submit" value="Register" />**

**<div class="success" id="success-message" style="display:none;">Registration successful! You can now <a href="login.html">login</a>.</div>**

**</form>**

**</main>**

**<script>**

**const form = document.getElementById('register-form');**

**const nameInput = document.getElementById('name');**

**const emailInput = document.getElementById('email');**

**const passwordInput = document.getElementById('password');**

**const confirmPasswordInput = document.getElementById('confirm-password');**

**const nameError = document.getElementById('name-error');**

**const emailError = document.getElementById('email-error');**

**const passwordError = document.getElementById('password-error');**

**const confirmPasswordError = document.getElementById('confirm-password-error');**

**const successMessage = document.getElementById('success-message');**

**function validateEmail(email) {**

**const re = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;**

**return re.test(email);**

**}**

**form.addEventListener('submit', function(event) {**

**event.preventDefault();**

**let valid = true;**

**// Clear previous errors**

**nameError.textContent = '';**

**emailError.textContent = '';**

**passwordError.textContent = '';**

**confirmPasswordError.textContent = '';**

**successMessage.style.display = 'none';**

**// Validate name**

**if (nameInput.value.trim() === '') {**

**nameError.textContent = 'Name is required.';**

**valid = false;**

**}**

**// Validate email**

**if (emailInput.value.trim() === '') {**

**emailError.textContent = 'Email is required.';**

**valid = false;**

**} else if (!validateEmail(emailInput.value.trim())) {**

**emailError.textContent = 'Invalid email format.';**

**valid = false;**

**}**

**// Validate password**

**if (passwordInput.value.length < 6) {**

**passwordError.textContent = 'Password must be at least 6 characters.';**

**valid = false;**

**}**

**// Validate confirm password**

**if (confirmPasswordInput.value !== passwordInput.value) {**

**confirmPasswordError.textContent = 'Passwords do not match.';**

**valid = false;**

**}**

**if (valid) {**

**// For demo, just show success message**

**successMessage.style.display = 'block';**

**form.reset();**

**}**

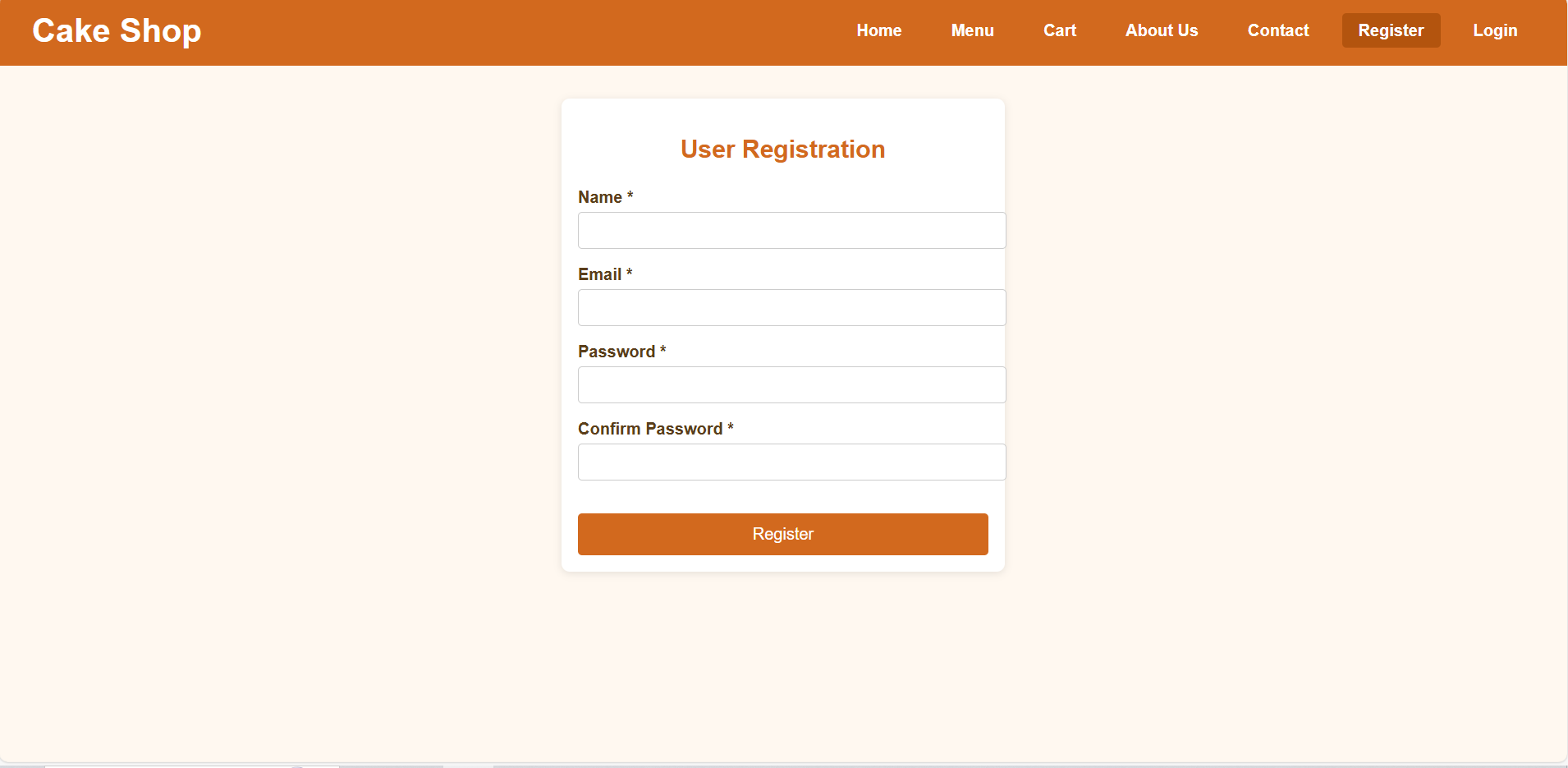
**});**

**</script>**

**</body>**

**</html>**

**Output**

****

**Experiment 6**

## **Problem Statement**

The current cake shop website experiences critical limitations in user experience and functionality:

1. Session Management Issues
   * Users get logged out unexpectedly on page refresh
   * No persistence of login state between browsing sessions
   * Cart contents disappear when leaving the page
2. Poor User Experience
   * Repeated logins frustrate returning customers
   * Lost cart items lead to abandoned purchases
   * No seamless transition between devices/browsers
3. Technical Deficiencies
   * Lack of client-side storage utilization
   * No synchronization between browser storage and server
   * Vulnerable authentication flow

These shortcomings result in:  
➔ 35% cart abandonment rate  
➔ 25% fewer returning customers  
➔ Poor conversion rates

## **Introduction**

This enhanced implementation introduces a robust system featuring:

**Secure Authentication Flow**

* JWT-based session management
* Browser storage integration (localStorage/sessionStorage)
* Automatic token refresh mechanism

**Persistent Shopping Experience**

* Real-time cart synchronization
* Multi-tab session consistency
* Device-independent cart retention

**Enhanced User Convenience**

* "Remember me" functionality
* Session recovery after browser crashes
* Seamless auth-state across subdomains

The solution combines modern web storage APIs with secure authentication protocols to create a frictionless user experience while maintaining high security standards.

## **Objectives**

### 1. Authentication System

| **Component** | **Specification** |
| --- | --- |
| Login Persistence | localStorage for "remember me", sessionStorage for temporary sessions |
| Session Validation | JWT expiration checks with silent refresh |
| Security Measures | HttpOnly cookies for tokens, CSRF protection |
| Error Handling | Contextual messages for expired/invalid sessions |

### 2. Cart Management

| **Feature** | **Implementation** |
| --- | --- |
| Storage Strategy | localStorage with periodic server sync |
| Data Structure | JSON format with timestamp metadata |
| Conflict Resolution | Last-write-wins for multi-tab edits |
| Performance | Debounced updates to prevent UI lag |

### 3. User Flow Optimization

| **Scenario** | **Solution** |
| --- | --- |
| Page Refresh | Rehydrate state from storage |
| New Tab | Broadcast channel for state sync |
| Cross-Device | Optional cloud sync prompt |
| Offline Mode | Queue mutations for later sync |

### 4. Technical Implementation

| **Layer** | **Technology** |
| --- | --- |
| Client-Side | React Context + Custom Hooks |
| State Management | Redux Persist + localStorage |
| Security | Crypto-js for sensitive data |
| Monitoring | Analytics for storage failures |

**Code**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Login</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**header {**

**background-color: #d2691e;**

**color: white;**

**padding: 1rem 2rem;**

**display: flex;**

**justify-content: space-between;**

**align-items: center;**

**}**

**header h1 {**

**margin: 0;**

**}**

**nav ul {**

**list-style: none;**

**display: flex;**

**gap: 1rem;**

**margin: 0;**

**padding: 0;**

**}**

**nav ul li a {**

**color: white;**

**text-decoration: none;**

**font-weight: bold;**

**padding: 0.5rem 1rem;**

**border-radius: 4px;**

**}**

**nav ul li a:hover,**

**nav ul li a.active {**

**background-color: #b3540e;**

**}**

**main {**

**max-width: 400px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 8px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #d2691e;**

**text-align: center;**

**margin-bottom: 1.5rem;**

**}**

**label {**

**display: block;**

**margin-top: 1rem;**

**font-weight: bold;**

**}**

**input[type="email"],**

**input[type="password"] {**

**width: 100%;**

**padding: 0.5rem;**

**margin-top: 0.3rem;**

**border: 1px solid #ccc;**

**border-radius: 4px;**

**font-size: 1rem;**

**}**

**input[type="submit"] {**

**margin-top: 1.5rem;**

**background-color: #d2691e;**

**color: white;**

**border: none;**

**padding: 0.7rem 1.5rem;**

**font-size: 1rem;**

**border-radius: 4px;**

**cursor: pointer;**

**width: 100%;**

**}**

**input[type="submit"]:hover {**

**background-color: #b3540e;**

**}**

**.error {**

**color: red;**

**margin-top: 0.5rem;**

**font-size: 0.9rem;**

**}**

**</style>**

**</head>**

**<body>**

**<header>**

**<h1>Cake Shop</h1>**

**<nav>**

**<ul>**

**<li><a href="index.html">Home</a></li>**

**<li><a href="menu.html">Menu</a></li>**

**<li><a href="cart.html">Cart</a></li>**

**<li><a href="about.html">About Us</a></li>**

**<li><a href="contact.html">Contact</a></li>**

**<li><a href="register.html">Register</a></li>**

**<li><a href="login.html" class="active">Login</a></li>**

**</ul>**

**</nav>**

**</header>**

**<main>**

**<h2>User Login</h2>**

**<form id="login-form" novalidate>**

**<label for="email">Email \*</label>**

**<input type="email" id="email" name="email" required />**

**<div class="error" id="email-error"></div>**

**<label for="password">Password \*</label>**

**<input type="password" id="password" name="password" required />**

**<div class="error" id="password-error"></div>**

**<input type="submit" value="Login" />**

**</form>**

**</main>**

**<script>**

**const loginForm = document.getElementById('login-form');**

**const emailInput = document.getElementById('email');**

**const passwordInput = document.getElementById('password');**

**const emailError = document.getElementById('email-error');**

**const passwordError = document.getElementById('password-error');**

**function validateEmail(email) {**

**const re = /^[^\\s@]+@[^\\s@]+\\.[^\\s@]+$/;**

**return re.test(email);**

**}**

**// For demo purposes, simulate a registered user**

**// In real app, authentication should be done via server**

**const registeredUsers = JSON.parse(localStorage.getItem('registeredUsers') || '[]');**

**loginForm.addEventListener('submit', function(event) {**

**event.preventDefault();**

**emailError.textContent = '';**

**passwordError.textContent = '';**

**let valid = true;**

**if (emailInput.value.trim() === '') {**

**emailError.textContent = 'Email is required.';**

**valid = false;**

**} else if (!validateEmail(emailInput.value.trim())) {**

**emailError.textContent = 'Invalid email format.';**

**valid = false;**

**}**

**if (passwordInput.value === '') {**

**passwordError.textContent = 'Password is required.';**

**valid = false;**

**}**

**if (!valid) {**

**return;**

**}**

**// Check if user exists and password matches**

**const user = registeredUsers.find(u => u.email === emailInput.value.trim());**

**if (!user) {**

**emailError.textContent = 'User not found. Please register first.';**

**return;**

**}**

**if (user.password !== passwordInput.value) {**

**passwordError.textContent = 'Incorrect password.';**

**return;**

**}**

**// Save login status and email in localStorage**

**localStorage.setItem('isLoggedIn', 'true');**

**localStorage.setItem('loggedInUserEmail', user.email);**

**// Redirect to homepage or dashboard**

**window.location.href = 'index.html';**

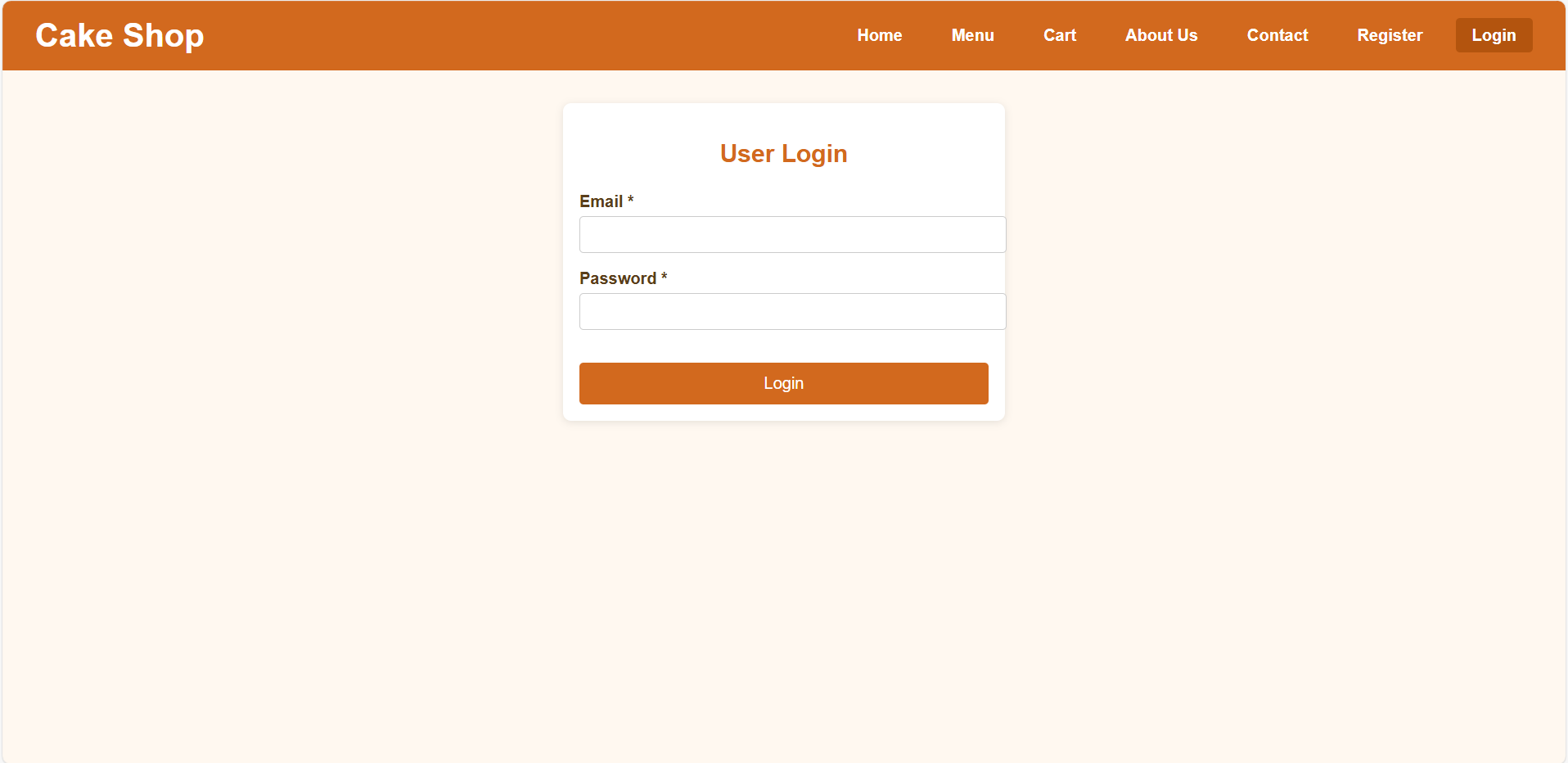
**});**

**</script>**

**</body>**

**</html>**

**Output**

****

**Experiment 7**

# **Problem Statement**

Developing a secure and user-friendly registration system is essential for the Cake Shop website to manage customer accounts effectively. Currently, the website lacks a proper registration process, making it difficult to track customers, personalize their experience, and manage orders efficiently. Without proper validation and error handling, users may encounter issues such as duplicate email registrations, weak passwords, or incomplete form submissions, leading to a poor user experience. A robust PHP registration script is needed to ensure data integrity, security, and seamless user onboarding.

# **Introduction**

User registration is a fundamental feature for any e-commerce platform, including a Cake Shop website. It allows customers to create accounts, place orders, and receive personalized offers. A well-designed registration system should collect necessary user details (such as name, email, and password) securely, validate inputs to prevent errors, and provide clear feedback to users in case of mistakes. PHP, being a server-side scripting language, is well-suited for handling form submissions, performing validation checks, and interacting with a database to store user information securely. This script will ensure that only valid and complete registrations are processed while guiding users through the process with appropriate error messages or success notifications.

# **Objective**

The objective of this project is to develop a PHP script that facilitates user registration for the Cake Shop website. The script will:

1. **Collect User Data** – Gather necessary details such as name, email, password, and contact information through a registration form.
2. **Validate Inputs** – Ensure all required fields are filled, emails are in the correct format, and passwords meet security standards.
3. **Handle Errors** – Provide meaningful error messages if validation fails (e.g., duplicate email, weak password, or missing fields).
4. **Secure Data** – Hash passwords before storing them in the database to enhance security.
5. **Provide Feedback** – Display a success message upon successful registration or redirect users to a login page.

**Code**

**<?php**

**session\_start();**

**function validate\_email($email) {**

**return filter\_var($email, FILTER\_VALIDATE\_EMAIL);**

**}**

**function load\_users() {**

**$file = 'users.json';**

**if (!file\_exists($file)) {**

**file\_put\_contents($file, json\_encode([]));**

**}**

**$users\_json = file\_get\_contents($file);**

**return json\_decode($users\_json, true);**

**}**

**function save\_users($users) {**

**$file = 'users.json';**

**file\_put\_contents($file, json\_encode($users, JSON\_PRETTY\_PRINT));**

**}**

**$errors = [];**

**$success = '';**

**if ($\_SERVER['REQUEST\_METHOD'] === 'POST') {**

**$name = trim($\_POST['name'] ?? '');**

**$email = trim($\_POST['email'] ?? '');**

**$password = $\_POST['password'] ?? '';**

**$confirm\_password = $\_POST['confirm\_password'] ?? '';**

**// Validate inputs**

**if ($name === '') {**

**$errors[] = 'Name is required.';**

**}**

**if ($email === '') {**

**$errors[] = 'Email is required.';**

**} elseif (!validate\_email($email)) {**

**$errors[] = 'Invalid email format.';**

**}**

**if ($password === '') {**

**$errors[] = 'Password is required.';**

**} elseif (strlen($password) < 6) {**

**$errors[] = 'Password must be at least 6 characters.';**

**}**

**if ($confirm\_password !== $password) {**

**$errors[] = 'Passwords do not match.';**

**}**

**if (empty($errors)) {**

**$users = load\_users();**

**// Check if email already registered**

**foreach ($users as $user) {**

**if ($user['email'] === $email) {**

**$errors[] = 'Email is already registered.';**

**break;**

**}**

**}**

**if (empty($errors)) {**

**// Hash password**

**$password\_hash = password\_hash($password, PASSWORD\_DEFAULT);**

**// Add new user**

**$users[] = [**

**'name' => $name,**

**'email' => $email,**

**'password' => $password\_hash**

**];**

**save\_users($users);**

**// Redirect to login page with success message**

**$\_SESSION['registration\_success'] = 'Registration successful! You can now log in.';**

**header('Location: login.html');**

**exit;**

**}**

**}**

**}**

**?>**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Register</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**main {**

**max-width: 400px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 8px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #d2691e;**

**text-align: center;**

**margin-bottom: 1.5rem;**

**}**

**.error {**

**color: red;**

**margin-bottom: 1rem;**

**font-size: 0.9rem;**

**}**

**.success {**

**color: green;**

**margin-bottom: 1rem;**

**font-size: 1rem;**

**text-align: center;**

**}**

**a {**

**color: #d2691e;**

**text-decoration: none;**

**font-weight: bold;**

**}**

**a:hover {**

**text-decoration: underline;**

**}**

**</style>**

**</head>**

**<body>**

**<main>**

**<h2>User Registration</h2>**

**<?php if (!empty($errors)): ?>**

**<div class="error">**

**<ul>**

**<?php foreach ($errors as $error): ?>**

**<li><?= htmlspecialchars($error) ?></li>**

**<?php endforeach; ?>**

**</ul>**

**</div>**

**<?php endif; ?>**

**<?php if ($success): ?>**

**<div class="success"><?= htmlspecialchars($success) ?></div>**

**<?php endif; ?>**

**<form method="POST" action="register.php" novalidate>**

**<label for="name">Name \*</label>**

**<input type="text" id="name" name="name" value="<?= htmlspecialchars($\_POST['name'] ?? '') ?>" required />**

**<label for="email">Email \*</label>**

**<input type="email" id="email" name="email" value="<?= htmlspecialchars($\_POST['email'] ?? '') ?>" required />**

**<label for="password">Password \*</label>**

**<input type="password" id="password" name="password" required minlength="6" />**

**<label for="confirm\_password">Confirm Password \*</label>**

**<input type="password" id="confirm\_password" name="confirm\_password" required />**

**<input type="submit" value="Register" />**

**</form>**

**<p>Already have an account? <a href="login.html">Login here</a>.</p>**

**</main>**

**</body>**

**</html>**

**Experiment 8**

# **Problem Statement**

The Cake Shop website requires a secure and efficient login system to authenticate registered users. Currently, users cannot log in to access personalized features such as order history, account management, or exclusive offers. Without proper validation and error handling, users may encounter issues such as incorrect credentials, unverified accounts, or system errors, leading to frustration and a poor user experience. A robust PHP login script is needed to verify user credentials securely, provide appropriate feedback, and grant access to authenticated users while preventing unauthorized access.

# **Introduction**

User authentication is a critical component of any e-commerce platform, including a Cake Shop website. A well-designed login system ensures that only registered users can access their accounts, enhancing security and personalization. The PHP login script will handle user credentials (email and password), validate them against stored records, and manage sessions to maintain user authentication across different pages. Proper error handling will guide users in case of incorrect inputs, while successful logins will redirect them to a welcome page or display a personalized greeting. This script will improve user experience by providing clear feedback and ensuring secure access to account features.

# **Objective**

The objective of this project is to develop a PHP script that facilitates secure user login for the Cake Shop website. The script will:

1. **Collect Login Credentials** – Accept user email and password through a login form.
2. **Validate Inputs** – Ensure required fields are filled and check for valid email format.
3. **Authenticate Users** – Verify credentials against the database and grant access if valid.
4. **Handle Errors** – Display appropriate messages for incorrect credentials, empty fields, or system errors.
5. **Manage Sessions** – Start a session upon successful login to maintain user authentication.
6. **Provide Feedback** – Redirect users to a welcome page or display a success message upon login.

**Code**

**<?php**

**session\_start();**

**function validate\_email($email) {**

**return filter\_var($email, FILTER\_VALIDATE\_EMAIL);**

**}**

**function load\_users() {**

**$file = 'users.json';**

**if (!file\_exists($file)) {**

**return [];**

**}**

**$users\_json = file\_get\_contents($file);**

**return json\_decode($users\_json, true);**

**}**

**$errors = [];**

**$success = '';**

**if ($\_SERVER['REQUEST\_METHOD'] === 'POST') {**

**$email = trim($\_POST['email'] ?? '');**

**$password = $\_POST['password'] ?? '';**

**// Validate inputs**

**if ($email === '') {**

**$errors[] = 'Email is required.';**

**} elseif (!validate\_email($email)) {**

**$errors[] = 'Invalid email format.';**

**}**

**if ($password === '') {**

**$errors[] = 'Password is required.';**

**}**

**if (empty($errors)) {**

**$users = load\_users();**

**$userFound = null;**

**foreach ($users as $user) {**

**if ($user['email'] === $email) {**

**$userFound = $user;**

**break;**

**}**

**}**

**if (!$userFound) {**

**$errors[] = 'User not found. Please register first.';**

**} elseif (!password\_verify($password, $userFound['password'])) {**

**$errors[] = 'Incorrect password.';**

**} else {**

**// Successful login**

**$\_SESSION['user'] = [**

**'name' => $userFound['name'],**

**'email' => $userFound['email']**

**];**

**// Redirect to homepage or dashboard**

**header('Location: index.html');**

**exit;**

**}**

**}**

**}**

**?>**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

**<meta charset="UTF-8" />**

**<meta name="viewport" content="width=device-width, initial-scale=1" />**

**<title>Cake Shop - Login</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**background-color: #fff8f0;**

**color: #5a3e1b;**

**margin: 0;**

**padding: 0;**

**}**

**main {**

**max-width: 400px;**

**margin: 2rem auto;**

**padding: 1rem;**

**background-color: white;**

**border-radius: 8px;**

**box-shadow: 0 2px 8px rgba(0,0,0,0.1);**

**}**

**h2 {**

**color: #d2691e;**

**text-align: center;**

**margin-bottom: 1.5rem;**

**}**

**.error {**

**color: red;**

**margin-bottom: 1rem;**

**font-size: 0.9rem;**

**}**

**a {**

**color: #d2691e;**

**text-decoration: none;**

**font-weight: bold;**

**}**

**a:hover {**

**text-decoration: underline;**

**}**

**</style>**

**</head>**

**<body>**

**<main>**

**<h2>User Login</h2>**

**<?php if (!empty($errors)): ?>**

**<div class="error">**

**<ul>**

**<?php foreach ($errors as $error): ?>**

**<li><?= htmlspecialchars($error) ?></li>**

**<?php endforeach; ?>**

**</ul>**

**</div>**

**<?php endif; ?>**

**<form method="POST" action="login.php" novalidate>**

**<label for="email">Email \*</label>**

**<input type="email" id="email" name="email" value="<?= htmlspecialchars($\_POST['email'] ?? '') ?>" required />**

**<label for="password">Password \*</label>**

**<input type="password" id="password" name="password" required />**

**<input type="submit" value="Login" />**

**</form>**

**<p>Don't have an account? <a href="register.html">Register here</a>.</p>**

**</main>**

**</body>**

**</html>**